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GENERAL VIEW

OF THE

AGRICULTURE

OF THE

COUNTY PALATINE OF CHESTE

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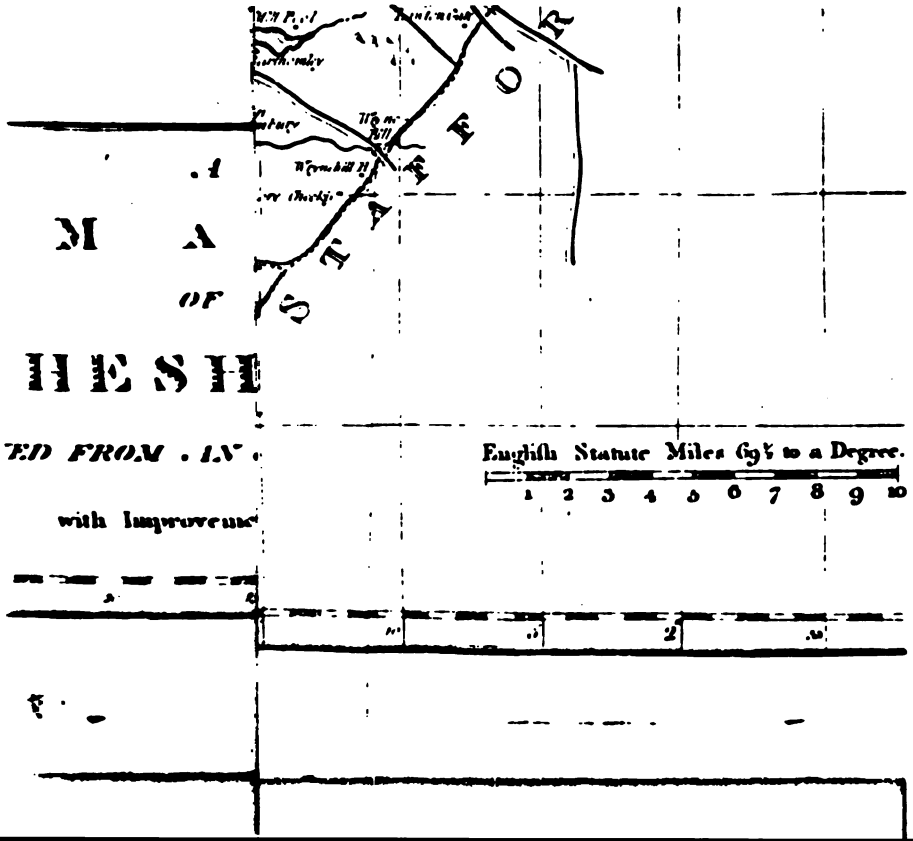
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GENERAL VIEW

OF THE

AGRICULTURE

OF THE

COUNTY PALATINE OF CHESTE

WITH

OBSERVATIONS ON THE MEANS OF ITS IMPROVEMENT.

By Mr. THOMAS WEDGE.

DRAWN UP FOR THE CONSIDERATION OF THE Gt. Brit BOARD OF AGRICULTUR
AND INTERNAL IMPROVEMENT.

LONDON:
PRINTED BY C. MACRAE.

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TO THE READER.

IT is requeſted that this paper, may be returned to the Board o Agriculture, at its Office in London, with any additional remark and obſervations which may occur on the peruſal, *written on th margin*, as ſoon as may be convenient.

It is hardly neceſſary to add, that this Report is, at preſen printed and circulated, for the purpoſe merely, of procuring fa ther information reſpecting the Huſbandry of this diſtrict, and o enabling every one, to contribute his mite to the improvement o the country.

The Board has adopted the ſame plan, in regard to all the oth counties in the united kingdom; and will be happy to give eve aſſiſtance in its power, to any perſon, who may be deſirous of ir proving his breed of cattle, ſheep, &c. or of trying any uſef experiment in Huſbandry.

LONDON, MARCH 1794.

INTRODUCTION.

THE county Palatine of Cheſter, excepting the peninſula of Wirrall, and a neck of land extending on the eaſtern ſide of it, is ſomething of an oval form.

Extent.—The main body of the county, from W. S. W. to to E. N. E. is about forty miles in length, and on the medium about twenty-two miles and a quarter in width. The peninſula of Wirral extends in a north weſtern direction from Cheſter to the Iriſh Sea, having on its ſides the eſtuaries of the rivers Dee and Merſey. The length of this peninſula is about ſixteen miles and a half; and its average width is about ſix miles. The neck, or narrow part, on the eaſtern ſide of the county, extends about thirteen miles, in a north eaſtern direction from Stock-port, and is, on an average, about three miles and half in width.

Boundaries, &c.—Cheſhire is bounded to the north by the Iriſh Sea, and by the counties of Lancaſter and York; on the eaſtern ſide, by the counties of Derby and Stafford; to the ſouthward, by Shropſhire; and to the weſtward, by the counties of Flint and Denbigh. It contains, as appears by Burdett's map, exclusive of the eſtuary of the river Dee, about 1040 ſquare miles, or 665,600 acres. Within the eſtuary of the river

river Dee, there are in Cheſhire about 10,000 acres of naked ſands, and 400 acres of marſh land.

The county is divided into ſeven hundreds, one hundred and one pariſhes, and contains one city and eleven market towns.

The proportions of the cultivated parts of the county, and thoſe which lie either waſte, or in a ſtate of little profit, are perhaps nearly as follows:

Arable, meadow, paſture, &c. about -	615,000
Waſte lands, heaths, commons, greens, but few woods of any extent, - -	30,000
Peat bogs and moſſes, - -	20,000
Common fields, probably, not ſo much as -	1,000
Sea ſands within the eſtuary of the Dee, excluſive of what may be upon the ſhores of the river Merſey,	10,000
	676,000

Surface.—The general appearance of Cheſhire is that of an extended plain; but on the eaſtern ſide there is a range of hilly, or rather mountainous country, connected with the Derbyſhire and Yorkſhire hills, of about twenty-five miles in length and five in width, extending from near Congleton to the north eaſtern extremity of the county. From Macclesfield, in a north weſtern direction, the ſurface is irregular and hilly; but continues of that deſcription not further than to Alderly, about five or ſix miles from Macclesfield. On the Shropſhire ſide, the ſurface is alſo broken and irregular. Approaching the weſtern ſide of the county, (at the diſtance of about ten miles eaſt from Cheſter) there is another range of irregular hills, which ſeparates the waters of the Dee and Merſey; theſe hills are in a direction almoſt north and ſouth, and extend about 25 miles from Malpas, on the ſouth ſide the county, to Frodſham,

ſham, on the north ſide of it. The remaining part of the county amounting to nearly four fifths of the whole, is probably not more, on the medium, than from 100 to 200 feet above the level of the ſea. Cheſhire has formerly been celebrated as the vale royal of England; and if ſeen from the high lands about Macclesfield, the whole of the county to the weſtward has undoubtedly the appearance of one extended plain.

Rivers.—The principal rivers are the Merſey and the Dee; theſe receive, and carry off to the ſea, all the ſmaller rivers and rivulets in Cheſhire, viz. the Weaver, the Dane, the Wheelock, the Goyte, the Bolling, &c. &c. The river Merſey divides Cheſhire from Lancaſhire for near ſixty miles; and is navigable about thirty-five miles from Liverpool, which is ſituated at the mouth of the river, on the Lancaſhire ſide, as far up as to the mouth of the river Irwell, for veſſels of ſixty tons. The Dee forms a part of the weſtern boundary of the county, and is navigable from the ſea to the city of Cheſter, for veſſels of conſiderable burthen.

The river Weaver falls into the Merſey about fifteen miles above Liverpool, and is navigable for veſſels carrying ſixty or ſeventy tons, near twenty miles from its junction with the Merſey, to Winsford Bridge, above Northwich. The plan upon which the latter of theſe rivers was made navigable (by means of locks and wears) deſerves to be noticed. The money raiſed for the purpoſe, amounting to about, 49,000l. was ſubſcribed by the gentlemen of the county, who were empowered by an act of parliament to divide on their reſpective ſubſcriptions an intereſt of 6l. per cent. 5l. per cent. on the capital, and 1l. per cent. for the riſk of the undertaking, until ſuch time as the tonnage, ariſing from the trade on that river, ſhould be ſufficient, by inſtalments, to reimburſe them. After ſuch reimburſement, the whole amount of tonnage, firſt deducting the charges of neceſſary repairs and management of the river,

" to

" to be from time to time employed for and towards amending " and repairing the public bridges within the ſaid county of " Cheſter, and ſuch other public charges upon the county, and " in ſuch manner as the magiſtrates ſhall yearly direct." All veſſels navigating in this river pay one ſhilling per ton, whether they paſs the whole length of the navigable part, or to any ſhorter diſtance; and the receipt amounted, as we are informed, laſt year, to near 8000l. The debt has been paid off ſeveral years, and near 4000 has been annually drawn from this reſource, for the laſt four or five years, in aid of the expence of building a new county goal at Cheſter.

Canals.—The Duke of Bridgewater's canal for fourteen feet boats from Runcorn (which is about thirteen miles above Liverpool) to Mancheſter, runs at no great diſtance from the Merſey, about twenty miles through the county, before it croſſes to the Lancaſhire ſide of that river. The Staffordſhire, or grand trunk canal, joins the Duke's canal at Preſton Brook, about five miles from Runcorn; and paſſes in a ſouth eaſtern direction through nearly the middle of the county. The Cheſter canal extends from Cheſter to Namptwich, in an eaſtern direction, about twenty miles. The intended Elleſmere canal, which, when completed, will unite with the rivers Merſey, Dee, and Severn, is propoſed for fourteen feet boats alſo, to commence about ten miles above Liverpool, at Pool Wharf in Wirrall; and proceed from thence to Cheſter, about eight miles and a half: from Cheſter it is at preſent propoſed to paſs about ſeven miles along the preſent Cheſter canal; then to turn off towards Elleſmere in Shropſhire, and to terminate at Shrewſbury, which is on the whole near ſixty miles, excluſive of the branches.

Soil and Climate—There are a great variety of ſoils in Cheſhire; clay, ſand, black moor or peat; marl and gravel, in various intermixed proportions, abound in different parts of the county. The three firſt, however, form the moſt predominant parts in the generally prevailing ſoils, and of theſe the largeſt proportion is a ſtrong retentive clay. The ſubſtratum is generally rammel or clay, marl, ſand, gravel, or red rock; but moſt commonly one of the two former, viz. clay or marl. The numerous moſſes, marſhy meadows, and peat bogs, which abound in different parts of the county, ſeem ſufficiently to prove, that either clay, marl, or ſome other unctuous earth, is very generally at no great depth below the ſurface. With regard to the climate, it has been ſtated, that a large proportion of the ſurface of Cheſhire is not more than from one to two hundred feet above the level of the ſea: from this circumſtance ſome idea of the climate of the county may be formed. It is, on the whole, more temperate and mild than the generality of other counties lying under the ſame latitude, owing to the flatneſs of its ſurface (abounding as it does with much hedge row timber) and to its lying within the influence of the ſea air.

GENERAL STATE OF PROPERTY, HUSBANDRY, &c.

ESTATES AND TENURES.

THERE are in Cheſhire many very conſiderable eſtates poſſeſſed by gentlemen who have reſidences within the county. The number of proprietors of land, poſſeſſing from 500l. to 1000l. per annum rent, are alſo many. But the race of yeomanry is ſuppoſed to be much diminiſhed; another ſpecies of freeholder, however, has increaſed in thoſe parts bordering on Lancaſhire and Yorkſhire, where a number of ſmall farms have been purchaſed by the manufacturers of cotton, &c. The tenure is almoſt univerſally freehold. There are ſome few copyholds, or what may be called cuſtomary freeholds paying fines and rents certain, in Macclesfield, Halton, and one or two other manors.

Farms and Farm Buildings.---The land is occupied in farms of various extent; ſome may contain 500 acres and upwards; there are few, however, of more than 300 acres; though the practice (but too frequently a pernicious one) of laying farms together, ſeems to be increaſing; on the whole, it is probable that there is at leaſt one farmer to every eighty ſtatute acres. In a pariſh, which is nearly in the center of the county, the following is an exact ſtatement:

£.		£.		*Tenants.*
From 300	to	150	per annum, there are -	6
150	to	100	- - - -	11
100	to	50	- - -	18
30	to	15	- - -	3
15	to	8	- - -	28

The farm buildings are in various ſtates, and in various ſituations; but, for the moſt part, in good repair, although few can be ſaid to be well ſituated. They are too often, without conſidering the advantages of ſituation, crowded together in villages, and the lands occupied with them confuſed and intermixed with each other; and the waſh of the yards, a thing of material conſequence, often loſt to the occupiers. Many of the newly erected buildings are conveniently ſituated, and properly arranged; but as it does not very frequently happen, that the houſes and offices are new at the ſame time, the ancient ſcite is uſually retained for the ſake of ſuch buildings as may happen to remain in tolerably good repair. The new erections are either of ſtone or brick, and ſlated; the old ones are commonly built with timber, framed, and the ſpaces filled up with brick; ſome only with hazles twiſted, and daubed with clay. The covering of the old buildings is moſtly of thatch. Conſidering how well adapted to fruit trees, both the ſoil and climate are in many parts of the country, there has been a very great neglect in reſpect to the planting of orchards.

Terms of Occupation, &c.---Leaſing for lives was formerly a very conſtant and general practice in Cheſhire; and is ſtill the cuſtom in ſome parts of the county, although there are, comparatively ſpeaking, few leaſes for lives remaining. Farms are now more generally ſet for a term of ſeven, eleven, fourteen, or twenty-one years; not many for a longer term than fourteen, and more probably for eleven years, than any other term. There are alſo many farms let from year to year only, particularly in the neighbourhood of gentlemen's reſidences. The uſual time of entry is at Candlemas, the off-going tenant having the uſe of the buildings, and a paſture field near the houſe, as an outlet for his cattle, until the 1ſt of May; the off-going tenant is alſo intitled, by the cuſtom of the country, to three-fourths of what fallow wheat there may be growing on the premiſes at the time of quitting.

The covenants between landlord and tenant are various and uncertain. The following are ſome of the moſt general clauſes:—The tenant agrees to pay his rent half-yearly; to pay all levies and taxes whatſoever; perform ſtatute-duty in the high-ways; carry any materials that may be wanted for the repair of his buildings, &c. To keep the buildings, fences, &c. in good, ſufficient, tenantable repair, being allowed timber and other neceſſary materials in the rough for that purpoſe. The tenant is confined to a certain quantity of tillage, uſually about one-fourth of his farm, excluſive of meadow and ſummer fallow; he is reſtrained from ploughing any of the lands for more than three, or at moſt four years, in one courſe of tillage, and covenants to lay the land down in a huſband like manner, with clover and graſs ſeeds. He is alſo reſtrained in ſome inſtances from ſowing bruſh wheat, and alſo from ſetting more potatoes than are neceſſary for the uſe of the family; and is not to ſet or aſſign any part of the premiſes without the conſent of the landlord. All mines, minerals, ſalt ſprings, rocks of ſalt and alum, are reſerved; and alſo all timber trees, with full liberty to fall, work, and carry away the ſame. The tenant is not to crop or lop any timber trees, but to endeavour to preſerve the ſame from injury, by cattle or otherwiſe: not to ſell or carry off the premiſes any ſtraw, dung, ſoil, aſhes, or compoſt; but to uſe, ſpend, or leave the ſame upon the premiſes at the end of the term. The tenant is frequently reſtrained from paring and burning. In ſome inſtances, he agrees to lime or marl annually a certain number of acres, and to lay his dung on the paſture land. This laſt clauſe has been lately introduced, and ſeems likely to become general. The injury done to land, by ſuffering weeds to run to ſeed, is guarded againſt in ſome leaſes, by the landlord's reſerving to himſelf the power of cutting them down at the tenant's expence, if he ſhall neglect to do it after being called upon.

The manner in which the Land is employed.—It ſcarcely need to be obſerved, that dairying is the principal object of Cheſhire huſbandry. It is, however, a fact well known here, that this county was formerly as celebrated for its wheat, as it is at preſent for its cheeſe; though it may, perhaps, be difficult to account for this change of management in its occupiers. In one inſtance, a dairy farm, of two hundred and forty acres, is nearly thus employed: from one hundred and fifty to one hundred and ſixty acres of paſture; thirty-five acres of meadow; from twenty-five to thirty acres of oats; from eight to ten acres of barley; from ſeven to ten acres of wheat; and occaſionally as many acres of ſummer fallow. Upon another dairy farm of one hundred acres, there is from ten to fourteen acres of oats; from ſix to eight acres of fallow wheat; and the like quantity of ſummer fallow: the remainder in paſture and mowing for hay; of the latter about twelve acres.

Artificial and Natural Graſſes.—When land is laid down to graſs, it is ſown principally with red clover; and it is probable that ten tons of the common red clover ſeed is uſed in this diſtrict for one ton of every other kind: the uſual quantity, when the red clover alone is uſed, is about twelve pounds to an acre. When white clover or trefoil is added, the quantity mixed with the red clover generally is three or four pounds to an acre. When rye-graſs or hay-ſeeds are added, the quantity is generally from two to three gallons per acre of the former, and from four to eight buſhels of the latter. There is little or no attention paid to the procuring of clean hay-ſeeds. The natural graſſes on the loamy ſoils are of the beſt kinds. The poas feſcues, and vernal graſs; the white clover, hop trefoil, perennial red clover, meadow foxtail, the yellow vetch, the blue vetch, and in ſhort, almoſt every kind of graſs worth attention, may be found in the paſtures. In the clay lands it is different; ſome of the above graſſes, with the carnation leaved, and coarſer graſſes, natural to that kind of land in other countries.

Rotation of Crops.—It may be neceſſary to explain as follows, viz. 1ſt. That when oats on ſtiff land are ſown on one furrow, it is generally ploughed ſoon after Chriſtmaſs. 2d. When oats on light land are ſown on one furrow, it is generally turned at the time of ſowing, or a little while before. 3d. When land is winter fallowed for oats, the number of ploughings are in general two: the firſt ploughing is in November, the ſecond at the time of ſowing. 4th. A winter fallow for barley; three ploughings generally: the firſt in November, ſtirred acroſs and harrowed in March, and the the third ploughing at the time of ſowing. 5th. A pin fallow for wheat; two ploughings after a previous crop, which has been gathered in the ſame year the wheat is ſown. 6th.

Bruſh wheat, is wheat ſown on one furrow after a previous crop, as in No. V. 7th. Summer fallowing of ſtubbles; the number of ploughings generally four: the firſt ploughing in February or March; and 8thly, Summer fallowing of turf, or what in Cheſhire is called "a fork." Number of ploughings three or four: the firſt at Midſummer, or a little before.

The grains moſt commonly cultivated in Cheſhire are, oats, wheat, and barley. The milch cattle in winter being in a great meaſure fed with ſtraw, peaſe and beans are, on that account principally, very rarely ſown:

1ſt. ON STIFF WEAK CLAY LAND.

Firſt year, oats, on one furrow.
Second year, ſummer fallow.
Third year, wheat, and ſometimes oats.
Fourth year, oats, one furrow, and laid down:

OR,

Firſt year, wheat, on a turf fallow.
Second year, oats, winter fallowed.
Third year, ditto, one furrow, and ſeed down, and grazed eight or nine years.

2d. ON SANDY LOAMS.

Firſt year, oats, on one furrow.
Second year, barley, on winter fallow.
Third year, ditto, and laid down:

OR,

Firſt year, oats, the land marled.
Second year, ditto, winter fallowed.
Third year, barley, ditto.
Fourth year, ditto, and laid down, and grazed four or five years.

3d. WEAK

3d. WEAK SAND LAND.

Firſt year, oats, one furrow.

Second year, ditto, winter fallowed.

Third year, ditto, ditto, and laid down, and grazed ſeven or eight years.

4th. ON THE BETTER SORT OF CLAY LAND.

Firſt year, oats, one furrow.

Second year, ditto, winter fallowed.

Third year, ſummer fallow.

Fourth year, wheat.

Fifth year, oats, winter fallowed, and laid down.

Sixth year, ſummer fallow.

Seventh year, wheat.

Eighth year, oats, and laid down and grazed three or four years.

5th. ON THE BETTER KIND OF SAND LAND.

Firſt year, oats, one furrow.

Second year, ditto, ditto.

Third year, turnips, marled and fallowed.

Fourth year, barley, and laid down and grazed four or five years.

6th. ON MOSS LAND.

Firſt year, oats.

Second year, potatoes, or fallow.

Third year, wheat.

Fourth year, oats, and clover.

Potatoes—are generally planted in the ſtead of a ſummer fallow, or are the firſt crop in the courſe on turf.

Green Crops—as winter food for cattle, are very little cultivated: there are, however, a very conſiderable quantity of potatoes and carrots grown on the north ſide of the county, which are chiefly intended for the ſupply of the Lancaſhire markets. But in years of plenty, when potatoes happen to be ſo low as 1s. per buſhel of 90 lb. conſiderable quantities of that root are given to cattle. Great encouragement has been held forth, though hitherto with little effect, by the Agricultural Society at Mancheſter, who have not only offered premiums to encourage the cultivation of turnips and cabbages, but many of the gentlemen who are members of that ſociety, have ſet the example, and cultivated them with great ſucceſs.

Early Potatoes.—The improved method, or what is yet called the ſecret of raiſing early potatoes, was firſt practiſed in this county by one Richard Evans, late of Wellazey, in Wirrall, deceaſed. The ſecret conſiſts in nothing more than to keep the ſets, (which ſhould be of the earlieſt kind), during winter, carefully guarded from the froſt, in a warm place, where they may ſprout at leaſt three inches, by the beginning of March. As ſoon after that time as the ſeaſon happens to be favourable, they are, with the ſprout on, to be carefully planted in a dry ſoil, in drills, with a ſmall rib of earth between each drill, and the end of the ſprout juſt under the ſurface of the ground. The plants ſhould be kept covered with ſtraw or ruſhes, &c. every night, as long as the froſt continue, and uncovered every favourable day. By this method, early potatoes have been as plentiful in Liverpool market, for ſome years paſt, in the middle of May, as they uſed to be, before this method was known, in the middle of June. A ſecond crop of potatoes is ſometimes grown on the ſame field, in the ſame year.

Common Potatoe Culture.—Potatoes are cultivated in the pariſh of Frodſham, (which is near to the Merſey, and near to Runcorn) with as much ſucceſs, and probably to as great an extent as in any other pariſh in the kingdom. It is eſtimated, that not leſs than 100,000 buſhels, of 90 lb. weight, have annually, for ſome years paſt, been grown in this pariſh; and a ready ſale has generally been found for them, owing to the great demand for this root in Lancaſhire, and to an eaſy and cheap communication with Liverpool, by means of the river Merſey, and with Mancheſter, by the Duke of Bridgewater's canal. In years of plenty, when the market is overſtocked with potatoes, and the price ſo low as one ſhilling per buſhel, conſiderable quantities have been given to different kinds of ſtock, viz. to feeding cattle, milch cows, horſes, and hogs, and we are informed with great ſucceſs: this is an intereſting ſubject of inquiry. But we are not enabled to ſpeak with any degree of certainty, as to the moſt eligible mode of giving this root, whether boiled or unboiled, both of which have been practiſed, and have their advocates. Potatoes are found to be of too laxative a nature, without an addition of ſome other kind of food; and here, again, there is an uncertainty as to the quantity and nature of the food moſt proper to be given with them to cattle, &c. for the neceſſary alterative or correction. To plant potatoes in (what is here thought to be) the moſt approved manner, a conſiderable depth of dry, light, or loamy ſoil, is neceſſary. The mode of culture is generally this: The land is ploughed before Chriſtmas to receive the meliorating influence of the froſts; in April it is ploughed acroſs, torn and pulverized with the harrow; after which it is ploughed deeply into butts of about five feet broad; in the latter end of April, or beginning of May, the ſets are put into holes made with a ſetting ſtick, at the diſtance of eight or ten inches from each other. About three weeks after, or as ſoon as the buds begin to appear, they are covered with about two inches of of ſoil, ſpread equally from a trench which is dug between the beds; and this not only adds freſh mould for the benefit of the potatoe plants; but alſo check sthe growth of couch graſs, which it will nearly deſtroy. When the plants appear in full row the ground is hoed, and afterwards kept clear from weeds by hand, till ſuch time as the plants have covered the ground. In digging up the potatoes, which is uſually done with a three pronged fork, care ſhould be taken to pick out all the couch graſs, and to carry it off the field. If this is properly done, the land in general is left in a ſtate of moſt excellent preparation for a crop either of wheat or barley; unleſs, however, in ſituations, where foreign manure can be purchaſed, or the crop is conſumed by ſtock upon the premiſes. The culture of potatoes muſt certainly have a tendency to impoveriſh every eſtate on which it is practiſed. The yard dung, in many parts of Cheſhire, is too much laviſhed on the potatoe ground; but this practice is, as has been ſtated, in ſome inſtances guarded againſt by the covenants between landlord and tenant. The quantity of manure uſed for potatoes, is generally from 20 to 40 tons on a ſtatute acre, worth from three to four ſhillings per ton; and is ſpread upon the land previous to the laſt ploughing. Three ploughings and harrowing may be eſtimated at from twenty to twenty-five ſhillings per acre. In planting, a peck of ſets to a rood of 64 yards is uſed: making the holes, putting in the ſets, and covering them, coſts about three halfpence per rood; and ſoiling the like expence: the expences of weeding are uncertain; getting up the crop at about ſixpence per rood. The produce in a general way, on good land, may be ſtated at about four buſhels, of 50 lbs. each, to a rood, or 300 buſhels on an acre. On ſhallow ſoiled land, potatoes are generally planted and ſoiled with the plough; a method which conſumes leſs manure than that before deſcribed. In this method of planting, (the land being prepared as before) a furrow about four inches deep is turned; the manure is ſpread lightly in the hollowed ſpace of it, the potatoe ſets having been previouſly dropt at the diſtance of about eight or ten inches aſunder; the ſame furrow is then turned back upon the ſets; the next row of ſets are dropt, and covered with manure in the hollowed ſpace of a furrow, which is turned towards the firſt row at the diſtance of about 18 inches from the firſt line of ſets, viz. leaving ſomething more than two furrows width of ſoil untouched with the plough: the ſets and manure are then covered as before; and the ſame method purſued, till the whole of the ground intended to be planted, is finiſhed. Soiling with the plough is thus performed: As ſoon as the plants begin to appear, the ground which had been balked is ſplit, or turned both ways upon the young plants, with a long wreſted plough, ſo as effectually to cover them. After this has been done, the crop is to be kept clear of weeds by the hand and hoe. Land for potatoes is very frequently hired of the farmers, by gardeners, or labouring people, at from five to ſix pounds per acre; and when it is conſidered, that the intereſt of the *hirer* extends no farther than for *one* year, it is not to be wondered at, if (as frequently happens on light and weak ſoils) the land is left, after a crop of potatoes, in a much worſe ſtate than it was in before: on the contrary, if the crop is a good one, and the ground is properly worked and cleaned at the time of getting it up, the land may be made as clean from couch graſs and weeds, as any other kind of culture can poſſibly make it. But the object of the poor man is to free the land of the potatoes, not of the couch graſs which it may contain; and it will generally be found to require a very conſtant attendance from the farmer, to ſee that the latter is properly effected.

Watered Meadows.—The meadows which lie near to the rivers are frequently overflowed, and produce great abundance of rich hay and aftermath. The country in general being flat, and the brooks and rivulets running in ſmall confined dingles, there is not any great extent of land capable of this improvement; but in thoſe ſituations where the land might be floated, there ſeems very often to want an attention to it.

The Manures—are, marl, lime, farm-yard dung, and various kinds of compoſt. On the eaſtern part of the country, lime is chiefly uſed; and on the weſt and ſouth, marl is the moſt general manure; of which there are various ſorts, viz. the clay marl, the blue ſlate marl, the red ſlate marl, ſtone marls, &c. The clay marl is ſuppoſed to prevail moſt. The quantity of marl uſed, varies according to its quality, and the quality and nature of the ſoils on which it is laid. The quantity is from one to two roods, each rood being ſeventy-two ſolid yards and upwards, on an acre; the expence of it filled into the cart is about two-pence a yard. Marl is generally laid upon the turf, and after the froſt has had its effect upon it, it is ſometimes harrowed before the field is broken up. When lime is uſed, it is commonly mixed with gutter clods, ſcourings of ditches, or ſoil; and laid on the land for barley. Farm-yard dung is frequently mixed with the ſoil off the ſides of lanes, with furrows drawn from between the buts of paſture land, with gutter clods, ditchings, &c. and to theſe marl or lime are ſometimes added. Sand is alſo frequently uſed as manure on ſtiff lands, and with great ſucceſs.

Foul or dirtied ſalt is a moſt excellent manure, either for paſture land, or fallows, when properly incorporated with ſoil, or other ſubſtances. And it is much to be regretted, that ſo large a quantity as 7 or 800 tons ſhould annually, in Cheſhire alone, be loſt to the community. The heavy duty laid upon refuſe, or dirtied ſalt, almoſt totally prevents its uſe for manure.

Farming Implements.—The uſual ſorts are as follows, viz. waggons with wheels, ſix and three inches broad: long carts with wheels of the ſame width, viz. ſix and three inches; theſe are moſtly uſed on the roads, and for drawing home the harveſt, &c. The dung carts have wheels ſix inches broad; ſmall carts for marl are uſed, and alſo a ſledge on wet grounds, for the conveyance of thorns, &c.

Ploughs.—That moſt commonly uſed, is the Rotherham or Yorkſhire plough; ſome few double ploughs are uſed, one which turns a furrow each way, uſed for water furrowing, or clearing between the buts of land, when ſown with wheat; and a guttering plough is alſo frequently uſed.

Harrows—of various ſorts, a drag for ſummer fallows, and double harrows large and ſmall.

Rollers—Large heavy ones, for paſture land and meadows. Rollers with knives for cutting ſoddy or tough fallows, with ſpikes for reducing marl, and ſtiff cloddy fallows; and ſmaller light ones for levelling the ſurface of land when ſown, are alſo in uſe.

The hodding Scythe—is an implement, we believe, but little known. It is much uſed in ſome parts of this country, for the purpoſe of freeing land from the common ruſh, and with good effect.

Since this method of eradicating ruſhes has been known, many ſcores of acres of low and marſhy meadow lands have been cleared; and with the aid of gutters more than doubled in their value. This implement is nothing more, than a ſhort ſtrong ſcythe: the blade is about twenty inches in length, but curves in a different manner to the common ſcythe; the edge is nearly one way of it, in a ſtraight direction from heel to point, but the flat part of the blade forms a curveture which varies about four inches from a ſtraight line. The ſneath, or ſneyd, to which the blade is fixed, is about three feet ſix inches long, and has one ſcythe like handle, placed about eighteen inches from the top: when the work is performed, one hand is placed upon the top of the ſneath, and with the handle in the other, the crown of the ruſh roots, by a ſmart ſtroke of the implement, is ſcooped out by the convex part of the blade. The moſt proper ſeaſon for this buſineſs is early in the ſpring. The ruſh roots ſhould be carried off to form a compoſt, and the hod holes, or cavities, filled level to the ſurface of the land with ſoil, and hay ſeeds, be ſown therein.

Seed Time and Harveſt.—Wheat is generally ſown about Michaelmas, but when it follows a crop of potatoes, it is rarely ſown before the end of October; oats from the middle of March, to the end of April; and barley uſually in the beginning of May. Hay harveſt commences in the beginning of July. Corn harveſt commonly begins in the latter end of July, or the beginning of Auguſt, and ends, with ſome other exceptions, in the middle or latter end of September.

Price of Labour &c.---A day labourer in winter has from ſeven to eight ſhillings per week; in the ſpring months from eight to nine ſhillings; and in harveſt from nine to fifteen ſhillings per week. A waggoner has from nine to ten guineas per annum. Home ſervants, from ſix to nine pounds; and boys, from one and a half to three and a half guineas per year. A dairy maid, who has the whole care and management of the dairy, from eight to ten pounds per annum. An aſſiſtant to the miſtreſs in the dairy, about 5l. 5s. Common maid ſervants, from 3l. 10s. to 4l. 10s. and girls, from thirty to fifty ſhillings a year. Mowing graſs, from eighteen-pence to two ſhillings per acre; oats and barley, from ſixteen-pence to two ſhillings; and reaping, from ſix ſhillings to eight ſhillings per acre. Threſhing wheat, from three-pence to four-pence a meaſure of thirty-eight quarts; oats, from 2s. to 2s. 6d. and barley, 3s. to 3s. 6d. for twenty meaſures. Blackſmith's work is from four-pence halfpenny to five-pence per pound. Aſh timber is about fifteen-pence, and oak about eighteen-pence per foot. The ſuſtenance of agricultural labourers in Cheſhire, conſiſts chiefly of potatoes, barley bread, and butter *(ſcarcely any cheeſe)* butter-milk, whey, and fleeting.

Draining.—Proper attention, generally ſpeaking, is not in Cheſhire paid to the draining of land, particularly amongſt the tenantry; and this may be chiefly attributed to the ſhort terms of their leaſes. The tax upon bricks is a great diſcouragement both to the land-owners, and occupiers, in this moſt eſſential branch of improvement. The drains in common uſe are either made with bricks, looſe ſtones, or bruſh wood; but chiefly the former.

Woods.—There are very few woods of any conſiderable extent in Cheſhire, but there is an abundance of timber, principally oak, in the hedge rows, particularly on the Lancaſhire ſide of the county, to a degree which is frequently detrimental to the farms. The injury, however, ariſing therefrom ſeems annually to be diminiſhing.

There are ſome few gentlemen of large property, who have paid great attention to planting, and have conſiderable plantations of young thriving timber upon their eſtates; but the ſorts chiefly planted of late years, have been of the quick growing, or ornamental kinds, and the oak has been too much neglected, owing perhaps to the ſlowneſs of its growth.

Proviſions.—A family in Cheſhire may be ſupplied with beef, mutton, and veal, taking the average of the whole year, at from four-pence to four-pence halfpenny per pound. Wheat, on the average of the laſt ſeven years, has been about 7s. 6d. per meaſure, weighing ſeventy-five pounds. Barley, during the like time, 3s. 6d. for thirty-eight quarts; oats 2s. 6d. for forty-ſix pounds; and cheeſe, about 46s. per hundred, of 120lb.

Roads.

Roads.—The great public roads, in general, are not very good; being moſt commonly either rough pavement, called cauſeways, or deep ſand. Within the laſt twenty years conſiderable improvements have been made, and greater attention has been paid than formerly was to the private roads.

The Parochial Roads—in the clay parts of Cheſhire, are generally bad for carriages; but a ſmall horſe pavement on one ſide of the road, renders them conveniently paſſable at all times for horſemen: their want of improvement is in ſome meaſure owing to the ſcarcity of good materials, there being gravel but in few ſituations. The expence of pavement roads in Cheſhire is about one ſhilling per ſuperficial yard.

Manufactories.—The cotton manufactories of Lancaſhire have extended very conſiderably into this county, and were making a rapid progreſs; but the late unfortunate failures, and the war, have at preſent ſtopped their further extenſion. There is ſome little cloth manufactured on the Yorkſhire ſide of this diſtrict. In and near Stock-port, there has been a conſiderable trade in hats, as well as in cotton and ſilk. There are ſilk-mills and copper-works at Macclesfield. A very conſiderable quantity of ſalt is manufactured in the neighbourhood of the Wyches. The effect of manufactories upon agriculture has been an increaſed demand for the produce of the land, and more eſpecially for the luxuries of life: they have at the ſame time ſeriouſly increaſed the price of labour, and occaſioned a ſcarcity of uſeful hands for huſbandry. This was ſeverely felt by the farmers, in the harveſt of 1792, many of whom were obliged to pay for labourers at the rate of three ſhillings, three ſhillings and ſix-pence, and upwards per day, beſides victuals and drink. By leſſening the number of hands, the price of labour is increaſed, and theſe effects muſt neceſſarily, in ſome meaſure, carry with them a depreſſion of the ſpirit of agricultural improvement. The demand for corn, increaſed by the increaſe of trade, has diminiſhed the ſize of dairies, and the more ſpeedy returns, by the ſale of oatmeal, (much uſed in Lancaſhire) has turned the attention of the farmers more to tillage than formerly, as many think, to the prejudice of the country.

Manufactories have alſo had a tendency to increaſe the poor rates, in thoſe pariſhes where they have been introduced, and have had a bad effect upon the morals of the people.

Beaſts of Draught.—Horſes are univerſally uſed by the farmers, (drawn at plough three or four in length); ſome gentlemen are making experiments with oxen.

The Fences—are generally of white thorn; but inſtead of cutting, pleaching, and renewing them with the help of ſtakes and binders, as is the cuſtom in many counties, when a hedge is here renewed, the ſtems are generally cut about two feet from the ground, and a ſlight bearding is, with the ſmaller parts of the branches, run between the *ſtumps*. In ſome parts of the country the hedges are clipped with ſheers, and form an excellent garden-like fence.

Horſes.—There does not appear to be any thing in the breed of horſes here employed in huſbandry, that is much worthy of notice; they are of the ſtrong black kind, generally about fifteen hands in height; thoſe purchaſed in Derbyſhire are thought to be the beſt, although the Leiceſterſhire kind have, as is ſuppoſed, improved the general breed of the country.

Hogs.—The ſpecies of hogs generally kept in Cheſhire, is a mixture between the long and ſhort-eared breeds, weighing, when fattened, from ten to twenty ſcore each, (twenty pounds to the ſcore). An eaſy method of preventing pigs from rooting is here practiſed by ſome gentlemen, and although a trifling circumſtance, it may not be thought unworthy of notice. The griſtley or horney part of the ſnout, through which the ring is uſually put, is cut away with a ſharp knife; by this means alone, without the leaſt injury ariſing from it to the animal, the miſchief of rooting is effectually prevented.

Sheep.—There is not any generally fixed breed of ſheep in Cheſhire; each common or waſte maintains a few; but on the foreſt of Delamere great numbers are kept. The wool of the foreſt ſheep is fine; it ſold in 1792 as high as thirty ſhillings the tod of twenty pounds; but laſt year did not reach twenty-ſix ſhillings; and ſome was ſold as low as a guinea. Little care is taken to croſs this breed of ſheep, whoſe carcaſſes, when fat, do not exceed forty or forty-five pounds weight: many of their fleeces are leſs than a pound, and very few of them weigh ſo much as a pound and a quarter. Mr. Wilbraham, of Delamere Lodge, has improved both the wool and carcaſs of his ſheep, by a croſs with the Herefordſhire breed, the Roſs kind; at leaſt the ſhepherds are eager to have the mixture, and with a very laudable ſpirit he has *lent* ſome rams for that purpoſe; *not let them at exorbitant prices, nor endeavoured*, by any ſiniſter means, &c. to keep the improvement to himſelf. Mr. Willbraham is in hopes of ſtill further improving his own flock, *and thoſe of his neighbours*, by croſſes with the South Down and Herefordſhire ſheep, and alſo with the Spaniſh kind of the true Marino breed. A great perſonage having been graciouſly pleaſed to diſperſe rams about the kingdom, for the purpoſe of improving the Britiſh wool, (an object worthy of the Chief of a trading and agricultural kingdom), this well-judged attention to the general intereſt will, it is truſted, in time, be the means of furniſhing the country with a ſpecies of wool which will prevent the neceſſity of ſending ſuch large ſums of money out of the kingdom, for Spaniſh wool, for the manufacture of broad cloth; and of this there is a reaſonable hope, as the fineneſs of the wool does not ſeem to depend ſo much on the warmth of the climate as on the breed of the animal.

The Dairy—being the main object, there are very few ſheep kept on the farms in Cheſhire; what are kept, the farmers are ſupplied with chiefly from the Welch and Scotch markets, and from the neighbouring counties of Salop, Derby, &c. In general, no more ſheep are kept on the farms, than can be ſupported by "*running in the ſtubbles, and picking the fallows.*"

Horned cattle.—There is no ſpecies of cattle which is peculiar to this county, and that being the caſe, the nature of the breed is ſcarcely to be deſcribed. The long-horned Lancaſhire, the Yorkſhire ſhort-horned or Holderneſs, the Derbyſhire, the Shropſhire, the Staffordſhire, the Welch, Iriſh, Scotch, and the new Leiceſterſhire cattle, have at different times been introduced in different parts of the county, and the preſent ſtock of dairy cows is a mixture of all theſe breeds. It is impoſſible to ſay which of the intermixed breeds are the moſt approved of as milkers, milk being the general object. To deſcribe the variety of opinions on this head, would be almoſt an endleſs taſk. There are ſome perſons who prefer half-bred cattle from the Lancaſhire and preſent Cheſhire; others prefer a breed between the Cheſhire and Lancaſhire; and there are thoſe who prefer a half breed between the Cheſhire and Welch; whilſt a croſs between the Lancaſhire and Holderneſs, and one between the Lancaſhire and Welch, have alſo their advocates. On the better lands, a breed partaking of the ſhort-horned Holderneſs, or the long-horned Lancaſhire, ſeems to be moſt prevalent. On the inferior lands, a middle ſized ſhort-legged breed, with a croſs of the Welch in them, are moſt preferred. The ſize, form, and production of the udder, is more attended to than the figure and bulk of the beaſt: and it ſeems to be univerſally allowed, that there is very little, if any, connection between utility for the dairy, and the much extolled points of faſhionable breeders, as to ſhape, beauty, &c. Where larger, and what are called finer ſhaped breeds, have been tried, they do not in general appear to have anſwered ſo well as thoſe ſmaller hardy ones before deſcribed. The general practice in breeding here, is to croſs; and it ſeems to be admitted, that ſuch cows as are bred "upon the land," are found to anſwer beſt; for when a purchaſed cow happens to have been bred upon poorer land than what ſhe is brought to, it is generally not till the ſecond year, at the earlieſt, that ſhe comes to her full milk. It is admitted alſo, that milking ſtock is frequently kept too long without changing. If a cow happens to prove a good milker, ſhe is commonly kept for that purpoſe, until ſhe is of little value for any other. An old cow may give more milk than a young one, but it is not of ſo rich a quality; and this is not all, for an old beaſt will require more, and better food, to keep her in condition and in full milk, than one of a proper age; which age is thought to be between four and ten years; but there are many who think a milker is not in her prime till five years old. The points which are generally thought to indicate a good milker, we believe, are as follows, viz. a large thin-ſkinned udder, large milk-veins, ſhallow and light fore quarters, wide loins, a thin thigh, a white horn, a long thin head, a briſk and lively eye, fine and clean about the chap and throat; and, notwithſtanding ſome of theſe points will be allowed, in feeding cattle, to be good ones, yet, upon the whole, a good milker is generally ill-ſhaped. Theſe indications, as a general rule to judge by, like all other general rules, have many exceptions. It is found, however, by experience, that thoſe cows which poſſeſs an aptitude to fatten, very ſeldom, if ever, are profitable milkers. The milking cows of Cheſhire will not, it is thought, weigh more than ſeven *ſcores* per quarter, on the average, when fattened; their prevailing colours are red, brindled, and pied; with almoſt univerſally "finched," or white backs.

Rearing.—When calves to keep up the dairies are home bred, they are generally reared from the beſt milkers; and this is the caſe with reſpect to bull calves, as well as heifers. Thoſe which are reared are generally calved in February or March, and are kept on the cows moſt commonly for about three weeks; afterwards they are fed with warm green whey, ſcalded whey, and butter-milk mixed, or hard fleetings: of the latter food, about five quarts are given at a meal to each calf. With the green whey, water is frequently mixed, and either oatmeal, wheat, or bean flour, is added; about a quart of meal or flour is generally thought to be enough to mix with forty or fifty quarts of liquid, which is ſufficient for a meal for ten calves: if flax ſeed is given, a quart of boiled ſeed is added to the whey, &c. for a like number of calves; otmeal gruel, and butter-milk, with a little ſkimmed milk mixed in it, are alſo frequently uſed for the ſame purpoſe: ſome one of theſe foods is given night and morning; but at the latter part of the time only once a day, with few exceptions, till, and for ſome time after, the calves are turned out to graſs, and continued in the whole for ten or twelve weeks. The firſt winter a good paſture is reſerved for the calves, and a little hay is given to them night and morning, as ſoon as hard weather ſets in. The ſecond winter their dry food is ſtraw, having an open ſhed occaſionally to ſhelter under, near their paſture; they are, however, frequently foddered with ſtraw in the open fields. The ſummer following, the heifers, at two years old off, are put to the bull. During the third winter, in ſome parts of the county, they lie out in the fields till near calving time; in other parts of the county, the heifers are tied up at the ſame time as the milking cows are: in both cases, they are fed with ſtraw night and morning, till about a month before calving: hay is afterwards given during the whole of the time they continue to be houſed, and ſometimes cruſhed oats when they calve early.

Management of the Cows.---They are taken up into the cow houſes about the middle of November, or as ſoon as the weather begins to be bad. It is commonly intended that the cows ſhould be permitted to go dry, about ten weeks before the time of their calving; as it is thought to render them leſs profitable the enſuing ſeaſon if kept to their milk too long.

The uſual dry foods are, wheat, barley, and oat ſtraw, hay, and cruſhed oats; the two former kinds of ſtraw are found to make cows go dry much ſooner than the latter; and another generally allowed effect, attributed to ſuch ſtraw, is, that more than the uſual time will be required to churn the cream of cows when ſo fed; but wheat ſtraw is eſteemed much more wholeſome than barley ſtraw, and as having leſs of thoſe effects attending it. Thoſe cows, which, at the time of houſing, are not expected to calve till rather late in the ſpring, are fed with oat ſtraw, and ſometimes hay, during the time they are milked; afterwards either wheat or barley ſtraw is given to them. The forward in calf cows, on the contrary, when taken up, are put either to wheat or barley ſtraw, as circumſtances may ſuit; and oat ſtraw is not given to them till the whole of the other ſtraw is conſumed. This, however, depends upon the price of markets for grain. The ſtraw fodder is continued in either caſe, till about three or four weeks before the time the cows are expected to calve: when hay is given to them, the quantity is from two to two and a half per week, per cow. From the time the cows have calved till they are turned out to graſs, ſome ground or cruſhed oats are given them twice a day, generally, from twenty to twenty-five quarts per week to each cow. In years when hay has been ſcarce, many farmers have given chopped ſtraw, and a little corn mixed in it, with two ſmall fodderings only of hay per day, and occaſionally a foddering of ſtraw at night. The cows are turned into an "outlet" (a bare paſture field near the buildings) about ten o'clock in the morning, and houſed again about four in the afternoon, the winter through; but have no fodder in the outlet. It is the practice of many, after the cows have been turned into the outlet, as ſoon as they ſhew a deſire of being taken up again, they are let into the yard, and houſed; and this in very cold, or in wet weather, muſt be a much better practice, than ſuffering them, as is uſually done, to ſtand ſhivering with cold in a field without ſhelter. Turning the cows out to graſs in good condition, is a matter much attended to, in order that they may, as the term is, "ſtart well;" for if a cow is not in good condition when turned out to graſs, or has been too much dried with barley ſtraw, it is a long time before ſhe gets into full milk. The ſeaſon of calving is March and April; ſome few cows drop their calves about Chriſtmas and in February; and the heifers in the beginning or middle of May. In a ſtock of twenty cows, the ten firſt dropped calves, at a month old, fetched to be ſlaughtered, from twenty to twenty five ſhillings each; the remainder, upon an average, not more than eight ſhillings; for when the cheeſe-making ſeaſon comes on, the calves, whether young or old, fat or lean, are all hurried away to the butcher. Allowing, however, for thoſe cows which are barren, thoſe which caſt their calves, and other caſualties, the average price of the calves does not amount to more than about twelve ſhillings, the dairy through. The quantity of land ſufficient to keep one cow the whole year, muſt of courſe vary with the quality and produce of different ſoils; and the ſize and nature of the beaſt, probably on the average, having reference to the quantity of hay and corn conſumed, as well as to the graſs and ſtraw, a cow, in the courſe of the year, will conſume the produce of three ſtatute acres of land. The quantity of cheeſe made per cow (varying from 50lb. to 500lb. and upwards) muſt alſo be governed by circumſtances.—The nature of the land, the oldneſs of the paſtures, and the ſeaſons, together with the wintering of the ſtock, have each a ſeparate influence: on the whole, perhaps the quantity may be ſtated at 300lb. from each cow, "ſlinkers" (ſuch as caſt their calves) and bad milkers included, the dairy through. The quantity of milk, agreeably to this eſtimation, if a gallon is ſuppoſed to produce a pound (ſixteen ounces) of cheeſe, will be eight quarts a day each cow, for twenty-two weeks (nearly) through the dairy. It muſt, however, be underſtood, that a number of the cows (which has been intimated before) continue in profit till about ten weeks before the time of calving. There are cows that will give twelve quarts of milk twice a day, for three or four months together; but it is remarked that theſe cows, who give much more than eight quarts at a meal, either go off their milk much ſooner, or elſe their milk has leſs richneſs in it, than that of others who do not give ſo large a quantity.

In the Management and Care of a large Dairy of Cows—(or a pack of cows, as is the term in Cheſhire) a conſtant and almoſt an unremitting attention is required. At calving time the cow-man, or the maſter, are frequently up two or three times in the courſe of a night, to ſee whether "any thing is amiſs." The racks and mangers are every day well cleaned out; due attention is paid to the appetites of the different beaſts, and the quantity of food is governed accordingly. After this is done, the maſter himſelf, generally, goes round from ſtall to ſtall juſt before bed time, and adds to or diminiſhes the quantity of fodder as occaſion may require.

Diſeaſes, &c. of Cattle.—The following are the moſt uſual maladies to which dairy cattle, &c. in Cheſhire, are ſubject;

and the remedies moſt commonly adminiſtered for them, viz. caſting, or ſlinking calf, for which no certain cauſe is aſſigned, nor any preventative known. One inſtance, which we have from good authority, deſerves to be noticed.

A whole dairy of near twenty cows caſt their calves in one year. The farmer ſold the bull, which he had uſed, to a neighbour, and the whole number of cows to which he was put the following year caſt their calves alſo. The original owner bought the bull again, and three of his cows only, that were put to him, had the like misfortune. Theſe few inſtances, although very ſtrongly indicative of ſome defect in the male, cannot be conſidered as being abſolutely concluſive as to the cauſe of the complaint; and more particularly ſo, as it ſeems (in Cheſhire at leaſt) to be almoſt generally admitted, that this misfortune moſt frequently happens, either in wet ſeaſons, or when the cattle are in very high condition; and generally continues for two or three years together. As a confirmation in ſome degree of this opinion, it is ſaid, that in thoſe parts of North Wales, where the cattle through neceſſity are kept in lower condition, inſtances of the kind very rarely happen.

For the Gargle,—or hard inflamed ſwellings of the udder, plentiful bleedings in the neck, and repeated, and continued rubbings of the tumoured part with butter-milk and ſalt; ſalt and water, treacle, Caſtile ſoap, or ointment, are the principal remedies in common uſe.

For Swelling in Clover.—Two ounces of Caſtile ſoap, and one ounce of dialthea, is ſtrongly recommended as a remedy, to prevent the neceſſity of tapping: feathers burnt and held for ſome time, while in full ſmoke, cloſe under the noſe of the animal, in a pan, is alſo favourably ſpoken of as a remedy.

For

For the Red Water, or, Bloody Urine.—One well recommended preſcription is as follows, viz. a handful of ſalt, and a handful of oatmeal after being fried in a pan till they are hard and black, are given in a quart of cold butter-milk, the beaſt being kept from food ſome little time before; and after giving it, this doſe, once or twice adminiſtered, will, it is ſaid, remove the complaint if it is not too long neglected: ſhould the cow be bound after this medicine, as frequently happens, ſtiff oatmeal gruel, about two quarts at a time, ſhould be given, twice or thrice a day, till that complaint is removed.

Loins fallen, or Milk Fever.—This diſeaſe moſt frequently happens, when a cow calves either in hot weather, or when in very high condition. To prevent it, the cow is bled plentifully, about three or four days before the time ſhe is expected to calve.

For the Gir, or Scouring in Calves.—Skimmed milk, or, new milk and water thickened with bean or wheat flour, is uſually given, and continued for their food till the ſcouring is removed; ſometimes the ſteep liquid, or rennet, is given for the ſame purpoſe; one or two half pint drenches, it is ſaid, will be ſufficient.

The Irons in Calves, or Striking.—To prevent this kind of malady, a rowel ſoon after Chriſtmas is inſerted, either in the bleeding part of the neck, or under the belly, at ſome little diſtance behind the fore legs: the mode of doing it, is the uſual one of rowelling horſes, only moderating the ingredients, in proportion to the different ſize and ſtrength of the animals. This is ſaid to be an effectual preventative. In the practice of many, regular and moderate keep, and twice bleeding, is thought to be a ſufficient precaution; the firſt bleeding

ing about Michaelmas, and the other as ſoon as the ſpring graſs begins to appear.

THE DAIRY MANAGEMENT, &c.

Milk Butter.—THERE does not appear to be any thing particularly worthy of notice, in the proceſs of making butter; unleſs it be the common practice of churning the "whole milk," inſtead of ſetting up the milk for the cream to riſe, and churning it alone, as is the cuſtom in moſt other parts of the kingdom. In Cheſhire, the whole milk (viz. cream, and all without being ſkimmed) is churned together; and preparatory to that, the meal is immediately, after milking in ſummer, cooled in quantities proportioned to the heat of the weather, previous to its being put together, which from time to time is done in earthen "cream mugs," or jars. In theſe jars (containing four or ſix gallons each) it is intended to ſtand till it is "carved" (as the term is) or clotted in a proper degree for churning, and this is judged to be the caſe ſufficient for the intended purpoſe, as ſoon as the whole is coagulated, and has acquired a ſmall degree of acidity, which will generally take place in warm weather, in the courſe of a day or two. In winter, the cream mugs are placed near a fire, to forward the "carving" or clotting of the milk. If the milk in warm weather has not been ſufficiently cooled before it is put to the former meal, or if in winter the mugs have been ſet too near the fire, it curdles the whole maſs, making it (as the phraſe is) "go all to whig, and whey;" and afterwards heave in the mug. Again, if in ſummer, or, when kept in a warm ſituation, the milk is not churned within a day, or a little more, after it is ſufficiently "carved," a kind of fermentation and heaving alſo enſues; in both caſes, the butter will be rank, and ill taſted; nor will the milk produce ſo much butter, as when it has been properly managed, and churned in proper time. We do not find, that any comparative experiments have in this part of the country been made, ſo as to aſcertain, with any degree of certainty, which of the two common modes of obtaining butter is beſt, in regard to quantity, flavour, &c. This matter, however, well worth attending to, might eaſily be aſcertained by experiments both ſimple and unexpenſive. In moſt parts of Cheſhire, butter is made up for ſale in lumps, that have the term "diſhes" applied to them; the weight of a "diſh" is one pound and a half, or twenty-four ounces.

The churns in common uſe are of the upright kind, and have, in ſome inſtances, a lever applied to them: when that is the caſe, one end of the lever (which is ſupported by an upright frame) is connected to the end of the churn ſtaff; the other end of the lever, by means of a rod, is connected to a crank in a toothed wheel, and this is worked by a pinion fixed upon the axis of a common winch. By means of this contrivance, the buſineſs of churning is performed by one perſon with the greateſt eaſe.

Whey Butter.—It may not be improper to explain, that what is here called "green whey," is the clear whey which is taken from the curd out of the cheeſe tub; the "white whey" is what is preſſed out of the curd by hand, &c. after being put into the cheeſe vat: the general term of whey is given only to ſuch part of the liquid as remains after the fleetings (made by ſcalding the whey) have been ſkimmed therefrom. In the proceſs of making whey butter, in ſome inſtances, the "thruſtings," or white whey, is ſet in "cream mugs," to "carve," and acidulate for churning, either by the warmth of the ſeaſon, or of a room, in the ſame manner as in the mode deſcribed for making milk butter. In other inſtances, the green and white whey are both boiled together for fleetings (the accounts of which follow): in this caſe, or when the green whey is boiled alone, (the boiler, if an iron one, being previouſly rubbed with butter, to prevent the whey from catching, or acquiring a burnt like taſte) ſuch a fire is kept, as will make the whey as hot as poſſible, without boiling, and as ſoon they have acquired that degree of heat, the buttery matter, which the whey contains, will break, or ſeparate from it, and riſe to the ſurface. This generally takes place in the courſe of about an hour; but when the whey is perfectly ſweet, a little ſouring is ſometimes added, to produce the breaking effect. In other reſpects, the proceſs of making whey butter is the ſame as that of milk butter.

Scalding Whey. The whey, when taken out of the cheeſe tub into braſs pans, or other convenient veſſels, is ſuffered to ſtand about a quarter of an hour; when it is put out into other veſſels, in which veſſels it again ſtands as long, and is then poured into the furnace pan. In each of theſe intervals, it depoſits a ſediment of curd, which is collected in the bottoms of the veſſels, and returned to the maſs of curd in the cheeſe tub.

That whey which drips into the tub while the cheeſe is being preſſed over it, is always kept by itſelf, and ſet by till it is at leaſt a day old; as ſoon therefore as the green whey, in the furnace pan, becomes ſo hot as to throw up a little white froth, or foam, (it muſt not boil) the "thruſtings" of the preceding day are put into it (unleſs as before ſtated they are otherwiſe diſpoſed of): theſe cauſe the whey to break, and throw up a ſubſtance, ſomething in appearance between cream and curd, which is conſtantly ſkimmed off, as long as it riſes, and put into the cream mugs to be churned for butter.

This whey cream, as it is called, is churned up thrice a week, and the average produce of butter which it yields, from one dairy cow, is from eight to ten ounces weekly. The difference of price between this and milk butter is generally from one penny to two-pence per pound. As ſoon as the whey is exhauſted of its cream, about two quarts of butter-milk is poured into it, which again breaks into what are called "fleetings,"

ings," or "flit milk," and theſe are ſkimmed off, for t
uſe of the ſervants, &c. &c. As it is matter of ſurprize
many, that ſo few pigs (about one pig and not more, weighin
about 18 ſcores when fat, is uſually fed from the remainin
offal of every eight or ten cows) are kept on Cheſhire dai
farms, it may not be improper to obſerve, that except in co
harveſt, the produce of the dairy, ſuch as whey, butter-mil
and fleetings, is the conſtant beverage of the ſervants a
labourers; and to this conſumption may be added the con
ſtant aid of "ſupping," as it is called, which each dairy fu
niſhes daily to the numerous cottagers around, who fetch
from the houſes.

CHESHIRE CHEESE MAKING.*

IT is not ſuppoſed, that any improvement of conſequence h
taken place in cheeſe-making during a great length of tim
except only the improved method of preparing ſteep. In
dairies, the ſame points are admitted to be the eſſential; b
although the means of attaining thoſe points are, upon far
ſimilarly circumſtanced, ſo far alike, as to differ materially
the minutiæ only, yet upon thoſe minutiæ much of the a
of cheeſe-making depends.

That an exact uniformity does not prevail, in every pa
of the proceſs, is no wonder; for there is not any of the bu
ſineſs which is conducted in a dairy, that tends in the leaſt
chymical exactneſs. And where there is no preciſion, the
can be no juſt compariſon; and where no compariſon can
made, there exiſts no foundation for an attempt at unifo
mity. The degree of heat at ſetting the milk together,
never meaſured; the quantity of ſteep is gueſſed at, and i
quality not exactly known; the quantity of ſalt neceſſary
undefined

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* The whole of this account refers to cheeſe of 60lbs. weight.—Cheeſe
this weight is ſuſceptible of every excellence to be found in Cheſhire cheeſe.

undefined; and the "ſweating" or fermenting of the cheeſe when made is accidental. Under theſe circumſtances, we cannot help expreſſing, by the way, a wiſh that a cheeſe farm of experiment might be eſtabliſhed in this county, under the patronage of the Board of Agriculture, and under the management of a perſon well ſkilled in chymiſtry, that ſomething like ſcientific principles might be diſcovered on which to conduct the proceſs.

Rennet or Steep---is an infuſion of the prepared ſtomach of a ſucking calf, uſually called the bag or maw-ſkin: in order to have this in perfection, the calf ſhould have lived on new milk only, and be quite in health at the time of being killed. Under theſe circumſtances, the maw-ſkin is always found to contain, when taken out of the calf, more or leſs of a firm, white, curd-like matter. This chyly matter is frequently ſalted for preſent uſe, and is generally eſteemed a proof of its being a good ſkin; but this proof of excellence is not always to be depended on. When calves are ſold, it is the cuſtom of Cheſhire to have the maw-ſkins returned; and it is alſo cuſtomary for ſuch farmers who live near to a butcher's ſhop, to attend the killing of calves, in order to chooſe the beſt. If the ſkins of their own calves prove bad ones, they pick thoſe that have curd in them, and taking it out, put it into ſuch of their own ſkins as happen to have none of it, and leave the empty ones for ſomebody elſe. Amongſt imported ſkins, the farmers often meet with thoſe of lambs and kids; which anſwer the intended purpoſe but indifferently.

Preparation of the Maw-Skin. When it comes from the butcher, the chyly matter is taken out, and the ſkin cleared from ſlime, and every apparent impurity, by wiping, or a gentle waſhing; the ſkin is then filled nearly full of ſalt, and placing a layer of ſalt upon the bottom of a mug, the ſkin is laid flat upon it; this mug is large enough to hold three ſkins

in

in a courſe; each courſe of ſkins ſhould be covered with ſalt, and when a ſufficient number of ſkins are thus placed in the mug, that mug ſhould be filled up with ſalt, and with a diſh, or ſlate over it, be put into a cool place, till the approach of the cheeſe-making ſeaſon, in the following year. The ſkins are then all taken out, laid for the brine to drain from them, and being ſpread upon a table, they are powdered on each ſide with fine ſalt, and are rolled ſmooth with a paſte roller, which preſſes in the ſalt; after that, a thin ſplint of wood is ſtuck acroſs each of them, to keep them extended while they are hung to dry.

Milk-Houſe. A northern aſpect is the beſt for a milk-houſe, and it ſhould be ſo ſheltered by buildings, or trees, as to keep it from the rays of the ſun during the whole day. The perfection of a milk-houſe is to have an uniform temperature in its contained air, the whole year round. If this is not attainable, recourſe muſt be had in hot ſeaſons to cold ſpring water, which ſhould be daily and plentifully poured on the floor: nor is cleanlineſs, at any time, in any of the departments of the buſineſs to be neglected.

Milking. The hour of milking, during the ſummer ſeaſon, is ſix, both night and morning. It is a general, and very prudent practice for the farmer himſelf to attend the milking, to aſſiſt in carrying the milk into the milk-houſe, and to ſee that the cows are properly dripped; for as each ſucceeding drop which a cow gives at a meal exceeds the preceding one in richneſs, it is an important point to have the cow's bags compleatly emptied, and the more particularly ſo, becauſe if that is not done, it has a tendency gradually to make them go dry. The milking pails commonly uſed, will hold about two gallons each, which, when full, are emptied into a bowl, or large wooden veſſel, that will contain three ſuch pails full, and in that the milk is carried to the milk-houſe, where it is poured through a ſieve into a leaden milk cooler. The ſieve is ſupported over the cooler by a cheeſe ladder. This cooler is framed on legs like a table, on the top of which legs is a leaden ciſtern about nine inches deep, five feet long, and two feet and a half wide. In the bottom of the ciſtern is a vent hole, to which is fitted a wooden ſpiggot, or plug. In ſome dairies, there are coolers ſufficient to hold a full meal's milk. In this caſe the milk ſtands in them all night, and after its cream is ſkimmed off in the morning, it is drawn out through the vent hole, into braſs pans, and ſo carried into the cheeſe tub. Where there is only one cooler, and that inſufficient to hold a meal's milk, the milk is drawn off into pans as ſoon as the cooler is full, which is again filled as it is brought to the houſe, obſerving to leave the milk laſt brought in, to ſtand in the cooler all night. The expeditious cooling of the milk has conſiderable influence in preventing its tendency to acidity in the heat of ſummer. When the weather is cold, the uſe of the leaden cooler is generally ſet aſide.

If milk was repeatedly drawn off into pans, and again returned into the cooler until quite cold, perhaps the quality of the cheeſe might thereby be improved, and the difficulty in making it be leſſened.

Quality of Milk. Cheſhire cheeſe is generally made with two meals milk, and that in dairies where two cheeſes are made in a day. In the beginning, and end of the ſeaſon, three, four, and even five or ſix meals milk are kept for the ſame cheeſe. It is difficult to ſay what proportion of the cream is withheld from the milk, before it is put together; the quantity may be varied, either through ſuppoſed judgment and ſkill in the art, or from other motives. The general cuſtom, however, in the beſt dairies, is to take about a pint of cream, when two meal cheeſes are made from the night's milk of twenty cows. In order to make cheeſe of the beſt quality, and in the greateſt abundance, it is admitted, that the cream ſhould remain in the milk; but whether the cream that is once ſeparated from it, can by any means be again ſo intimately united with it, as not to undergo a decompoſition in the after proceſs, admits of ſome doubt. There is, at leaſt, no abſurdity in attempting to prevent the ſeparation of two bodies, which it is our profeſſed intention to unite again. If a cheeſe made entirely of the night's milk, on which the cream has riſen, be as rich as one made of new milk, all other circumſtances being alike, it is a proof that milk and cream, after being ſeparated, may, by heating only, become as it were new milk again. Experiment alone can decide this point; but the practice here is to unite the milk and cream, as will be ſhewn hereafter; and the dairy-men ſay, that when ſo united, it differs not from new milk, as to the purpoſes of cheeſe-making.

The common Mode of making the Steep. In the evening, part of a dried maw-ſkin is cut with a pair of ſciſſars, and put into half a pint of luke warm water, to which is added as much ſalt as will lie on a ſhilling. In the morning, this infuſion (the ſkin being firſt taken out) is put, as hereafter mentioned, into the cheeſe tub of milk; but ſo great is the difference in quality, of theſe ſkins, that it is difficult to aſcertain what quantity will be neceſſary for the intended purpoſe. A piece, the ſize of a half crown, cut from the bottom end of a good ſkin (the bottom end being ſtrongeſt) will commonly be enough to give ſufficient ſtrength to the coagulum for a cheeſe of 60lb. weight; although ten ſquare inches of ſkin are often found too little.

It is cuſtomary to cut two pieces for each cheeſe; one from the lower, the other from the upper part of the ſkin. The cup in which this ſkin is infuſed, ought to be well ſcalded every day.

Improved Mode of preparing Steep. Take all the maw-ſkins provided for the whole ſeaſon, pickled and dried as before;

put them into an open veſſel or veſſels, and for each ſkin pour in three pints of pure ſpring water; let them ſtand twenty-four hours, then take out the ſkins, put them into other veſſels; add for each one pint of ſpring water, and let them ſtand twenty-four hours as before: on taking the ſkins out the ſecond time, gently ſtroke them down with the hand into the infuſion. The ſkins are then done with. Mix thoſe two infuſions together, paſs the liquor through a fine linen ſieve, and add to the whole a quantity of ſalt, rather more than is ſufficient to ſaturate the water, viz. until a portion of ſalt remains undiſſolved at the bottom of the veſſel. The next day, and alſo the ſummer through, the ſcum, as it riſes, is to be clearly taken off, and as the liquor ſhould not be ſuffered to remain, without a portion of undiſſolved ſalt at the bottom, it will be neceſſary frequently to add freſh ſalt, as that which was diſſolved will gradually form itſelf into cryſtals, and be taken off with the riſing ſcum. Somewhat leſs than a wine half pint of this preparation will generally be ſufficient for 60lbs. of cheeſe. Whenever any of this liquid is taken out for uſe, the whole ſhould be well ſtirred up.

Colouring. The colouring for cheeſe is, or at leaſt ſhould be, Spaniſh arnotta; but as ſoon as colouring became general in this county, a colour of an adulterated kind was expoſed to ſale in almoſt every ſhop. The weight of a guinea and a half, of real ſpaniſh arnotta, is ſufficient for a cheeſe of 60lbs. weight. If a conſiderable part of the cream of the night's milk be taken for butter, more colouring will be requiſite. The leaner the cheeſe is, the more colouring it requires. The manner of uſing arnotta is to tie up in a linen rag the quantity deemed ſufficient, and put it into half a pint of warm water over night; the infuſion is put into the tub of milk, in the morning (with the ſteep infuſion) dipping the rag into the milk, and rubbing it againſt the palm of the hand as long as any colour comes out.

Setting the Cheeſe together. It is, we believe, generally admitted, that not only the quantity, but the quality of the curd, as to texture, (viz. toughneſs, or otherwiſe) depends in a great meaſure upon the length of time the cheeſe is in coming, and that the time again depends on the quantity, and ſtrength of the coagulum uſed, the ſtate of the atmoſphere, and the heat of the milk when put together. In this ſtage of the art, where a degree of accurate certainty ſeems to be required, there is no other guide but the hand, and the external feelings: the thermometer of a Cheſhire dairy-woman is conſtantly at her fingers ends. Accordingly, the heat of the milk, when ſet, is endeavoured to be regulated by the *ſuppoſed* warmth of the room, and the heat of the external air (having reference alſo to the quantity, and ſtrength of the ſteep) ſo as that the milk may be the proper length of time in ſufficiently coagulating, which is generally thought to be about an hour and half. The evening's milk (of ſuppoſe twenty cows) having ſtood all the night in the cooler and braſs pans, the cheeſe-maker, (in ſummer) about ſix o'clock in the morning, carefully ſkims off the cream from the whole of it, obſerving firſt to take off all the froth and bubbles, which may amount to about a pint; this not being thought proper to put into the cheeſe, goes to the cream mug to be churned for butter, and the reſt of the cream is put into a braſs pan. While the dairy-woman is thus employed, the ſervants are milking the cows, having previouſly lighted a fire under the furnace, which is half full of water. As ſoon as the night's milk is ſkimmed, it is all carried into the cheeſe tub, except about three-fourths of a braſs pan full (three or four gallons), which is immediately placed in the furnace of hot water in the pan, and is made ſcalding hot; then half of the milk thus heated in the pan is poured alſo into the cheeſe tub, and the other half is poured to the cream, which, as before obſerved, was ſkimmed into another braſs pan. By this means all the cream is liquified and diſſolved, ſo as apparently to form one homogeneous, or uniform fluid, and in that ſtate it is poured into the cheeſe tub. But before this is done, ſeveral bowls, or veſſels, full of new milk, will, generally, have been poured into the cheeſe tub, or, perhaps, the whole morning's milk. Care is taken to ſkim off all the air bubbles, which may have formed in pouring the new milk into the cheeſe tub.

Variations.—In many celebrated dairies, during the whole ſummer, they do not heat a drop of the night's milk, only diſſolve the cream in a braſs pan floated, or ſuſpended in a furnace of hot water; and this (we are credibly informed) was the practice of a perſon, who made more than five hundred weight of cheeſe of the very beſt quality per cow (of 120 pounds each hundred) in one ſeaſon. In other dairies, they heat one third, one half, and even more than that of the previous night's milk. In all dairies, they are careful to liquify or melt the cream well before it is mixed with the milk in the tub. But whatever may be the cuſtom of heating, or not heating milk in any given dairy, the practice of that dairy varies as the weather becomes hot, cold, gleamy, or ſultry, &c. We have ſometimes cold chilly mornings, even in July, which compel the heating of milk in dairies, where the cuſtom is not to heat it. Again, in the laſt ſummer, milk put cool together, from the warmth of the weather, heated in the tub, ſo as to render the proceſs difficult; and this in dairies where the uſual practice is to heat half the night's milk. It is generally on poor clay lands, that the milk moſt requires warming; on good rich ſoils the milk will not bear much heating; at leaſt, by ſo doing the proceſs of cheeſe-making is rendered more difficult. The loweſt degree of heat on ſetting together, viz. putting the milk into the cheeſe tub, is one half cooler, than milk from a cow, the higheſt about twice the warmth of that animal's milk; and this is meant as the practice in *ſummer*, ſpeaking *generally*. But whatever may be the degree of heat ſuppoſed moſt proper for any particular dairy, the night's and morning's milk, and melted cream, being all put into the cheeſe tub, it is then ready to receive the rennet and colouring, or in the terms of the art, " to be ſet together."

The rennet and colouring being put into the tub, the whole is well ſtirred together; a woden cover is put over the tub, and over that is thrown a linen cloth. The uſual time of coming is one hour and a half, during which time it is frequently to be examined: if the cream riſes to the ſurface, before the coming takes place, as it often does, the whole muſt be ſtirred together ſo as to mix again the milk and cream, and this as often as it riſes, until the coagulation commences. A few ſmart ſtrokes on different ſides of the tub, with the cheeſe ladder, &c. will forward the coagulation if it is found to be too long in forming. If the dairy woman ſuppoſes the milk, &c. to have been, accidentally, put together cooler than ſhe intended, or that its coolneſs is the cauſe of its not coming, hot water, or hot milk, may be poured into it, or hot water in a braſs pan partially immerged therein. But this muſt be done before it is at all coagulated; for after that takes place, though but imperfectly, it muſt not be tampered with ſo as to break the forming curd: a conſiderable part of the cream would thereby be diverted into the whey, and the quantity of curd much leſſened. Before the coagulation takes place, an additional quantity of rennet may alſo be put in, if thought neceſſary; but this will, after coagulation, be added with little effect, as no means can be uſed to mix it with the whole maſs, without diſturbing the forming curd. If the cheeſe has been ſet together hotter than it was meant to be, the oppoſite means, under the ſame precautions, may be recurred to. But the more general practice is, to ſuffer the proceſs to proceed, hot as it is, until the firſt quantity of whey is taken off; a part of which being ſet to cool, is returned into the tub to cool the curd. When the cheeſe happens to come much ſooner than a proper time, owing to too great a degree of heat in the milk on ſetting, or putting together, or too great a ſtrength of ſteep, there is leſs curd; and it is conſiderably tougher, than when the milk has been ſet cooler together than uſual, or when, rather, too little ſteep has been uſed. In the latter caſe, the curd is exceedingly tender, and when that ſo happens, a part of the whey is taken out of the cheeſe tub, and heated as much as may be thought ſufficient, to give to the curd, on being mixed with it, a proper degree of toughneſs. In an hour and a half (as mentioned before) if all goes on well, the coagulation will be formed. This point is determined by gently preſſing the ſurface of the milk with the back of the hand. Experience alone is the only guide in this teſt, for the firmneſs of curd will, (as before ſtated) from the milk ſet hot together, be much greater than that from milk which has been ſet cold together. Another criterion to judge whether the milk be ſufficiently coagulated, is, to liſt up the ſkimming diſh, which is always left inverted on the ſurface of the milk. If the cheeſe be properly come, the whey and curd will diſtinctly appear where the ſkimming diſh lay.

Breaking down the Curd and Gathering, &c. If the milk has been ſet together very warm, the curd (as before obſerved) will be firm; in this caſe the uſual practice is to take a common caſe knife, and make inciſions acroſs it, to the full depth of the knife blade, at the diſtance of about one inch, and again croſswiſe in the ſame manner; the inciſions interſecting each other at right angles. The whey riſing through theſe inciſions is of a fine pale green colour. The cheeſe-maker and two aſſiſtants then proceed to break the curd: this is performed by repeatedly putting their hands down into the tub (the cheeſe-maker with the ſkimming diſh in one hand) and breaking every part thereof as they catch it. Raiſing the curd from the bottom, and ſtill breaking it—This part of the buſineſs is continued till the whole is broken uniformly ſmall; it generally takes up about forty minutes, and the curd is then left covered over with a cloth for about half an hour, to ſubſide.

If the milk has been ſet cool together, the curd will (as mentioned before) be much more tender, the whey will not be ſo green, but rather of a milky appearance. The cheeſe-maker in this caſe, inſtead of the knife, has recourſe to the ſkimming diſh, the edge of which ſhe holds perpendicular to the ſurface of the whey in the tub, and dips it gently an inch or two into the curd, and turns it over until the whole ſurface is thus turned. The breaking then proceeds as before, but a cautious and gentle mode of doing it, is more neceſſary than in the former caſe. Rather more time of courſe is requiſite for breaking down a cold, than a hot cheeſe; but when ſufficiently broken, it is covered over, and left to ſubſide as before. After ſtanding about half an hour, as much whey is taken out of the tub into the braſs pans, as conveniently may be, without taking any of the curd with it. In ſome daires this whey is occaſionally heated, in others cooled (or at leaſt a part of it) and returned into the cheeſe-tub again, as the weather, or other circumſtances, may require. In general, however, it is not returned to the curd, but the whey being laded out of the tub, the breaking recommences as before for about one quarter of an hour; it is then left to ſettle for a few minutes, when the whey is again laded out with the former precaution.

The bottom of the tub is now ſet rather a tilt, the curd is collected to the upper ſide of it, a board is introduced of a ſemicircular form, to fit looſely one half of the tub's bottom. This board is placed on the curd and a ſixty pound weight upon it, to preſs out the whey, which draining to the lower ſide of the tilted tub is laded out into braſs pans. Such parts of the curd as are preſſed from under the board, are cut off with a knife, placed under the weighted board, and again preſſed. This is repeated again and again, the whey being conſtantly laded out as it drains from the curd. The whole maſs of curd is then turned upſide down, put on the other ſide of the tub, again preſſed, pared, and preſſed as before. The board and weight being removed, the curd is cut into ſeveral pieces of about eight or nine inches ſquare, piled upon each other, and preſſed with the board and weight (repeating the cutting and piling) as long as any whey drains from it. A ſtranger to the buſineſs would conclude that much ſtreſs was laid upon breaking the curd, juſt on the ſurface of the whey, for he obſerves that the whole of the curd is broken there, and the palms of the women's hands being turned upwards, keep continually raiſing, and buoying up a portion of curd to the ſurface, with a ſeeming intention to delay the cruſhing of it, until it floats upon the top; but this circumſtance is owing to the lightneſs of the curd in that ſtate, and which on that account eſcapes the graſp, until it comes in contact with a lighter medium, the air. It ſcarcely need be added, that the more gentle the whole of the buſineſs in the tub is performed, the more perfect will be the ſeparation of curd and whey. The next thing is to break the curd in a braſs pan. After being preſſed in the tub as long as any conſiderable quantity of whey drains from it, the curd is cut into three (nearly) equal portions, one of which is taken into a braſs pan, and is there by two women broken exceedingly fine. As ſoon as it is coarſely broken, a large handful of ſalt is added, which in the ſubſequent breaking is well mixed with the curd; that portion of curd being ſufficiently broken, is put into a cheeſe vat which is placed to receive it, on a cheeſe ladder over the cheeſe-tub. The vat is furniſhed generally with a coarſe cheeſe-cloth. The ſecond and third portions of the curd are treated in the ſame manner, and emptied into the vat; except, that into the middle portion, eight, nine, or ten times the quantity of ſalt is uſually put. By ſome dairy-women, however, each portion is ſalted alike, and with no more than three large handfuls to each. The breaking takes up more, or leſs time, as the cheeſe

was

was ſet together hotter or colder; half an hour is, perhaps, the longeſt time.

Thruſting, or hand-preſſing the Cheeſe in the Vat.—The curd, when put into the cheeſe-vat, in its broken ſtate, is heaped above the vat in a conical form; to prevent it from crumbling down, the four corners of the cheeſe-cloth are turned up over it, and three women placing their hands againſt the conical part, gently, but forcibly, preſs it in near a horizontal direction, conſtantly ſhifting their hands when any portion of the curd is ſtarting from the maſs, and turning down, and folding up the cloth as occaſion requires. As ſoon as the curd adheres together ſo as to admit it, a ſmall ſquare board with a corner of the cloth under it, is put on the top of the conical part of the curd, with a ſixty pound weight upon the board. Several iron ſkewers are, at this time, ſtuck in the cone, and alſo through holes in the ſide of the vat. In many dairies, a lever is uſed to thruſt or preſs the cheeſe; this is a long ſubſtantial pole, one end of which is faſtened in the wall, in a direction nearly parallel to the top of the cheeſe, on which (the cheeſe) a ſmall board is placed to receive the lever. The power gained by it is uſed at diſcretion. In other dairies, they uſe thruſting crews, which are fixed to the floor above, the power whereof may be regulated at pleaſure. The employment of the women is now drawing out, and putting in the ſkewers, thruſting and keeping together the portions of curd that the power of the weight, or lever, &c. diſplaces. This operation is continued till the whey, which at firſt ran from it freely, begins to be diſcharged by drops; the weight, &c. and ſkewers are then removed, and one woman takes up the corners of the cloth, while the others break the curd half way to the bottom of the vat as ſmall as they can. Some people uſe a wooden, or tin hoop, about nine inches broad, inſtead of holding up the corners of the cloth, during this breaking. After the upper half of the cheeſe is thus broken, it has again a weight, or other power, applied to it, and is ſkewered and thruſtd as before; at firſt the whey, again, runs freely, and the operation is continued as long as thoſe means will preſs out a drop of whey. Two of the women then take the four corners of the cloth, (the ſkewers, &c. being removed) and the other woman lays hold of the vat, which is drawn from the cheeſe, and after rinſing it in warm whey, and putting another clean cloth over the upper part of the cheeſe, it is returned inverted into the vat again; and being placed on the ladder over the tub, is broken half way through as before: the thruſting, weighting, and ſkewering, &c. is repeated, and continued from two to four hours, or as long as a drop of whey can be extracted from the cheeſe. In the practice of ſome dairy-women, ſome ſpare curd is kept to mix with the following day's cheeſe, from an opinion that it will prevent the cheeſe ſwelling under the preſs, &c. But on the whole this method is but ſeldom practiſed.

Putting the Cheeſe into the Preſs, &c.—When no more whey can be extracted by the aforeſaid means, the cheeſe is again turned in the vat, and rinſed as before in warm whey. The cloth now made uſe of is finer and larger than the former, and is ſo laid, that on one ſide it ſhall be level with the edge of the vat, and on the other wrap over the whole ſurface of the cheeſe, and the edges put within the vat: thus perfectly incloſing the whole cheeſe in the cloth. In this ſtage of the buſineſs the cheeſe is ſtill higher than the edge of the vat; and to preſerve it in due form, recourſe is had to a tin binder or hoop, about three inches broad, which is put round the cheeſe, on the outſide of the cloth, and the lower edge of the binder preſſed down within the vat, ſo low as that the upper edge of it may be level with the ſurface of the cheeſe. The cheeſe is then carried to the preſs, and a ſmooth ſtrong board being placed over it, the preſs is gently let down upon it; the uſual power of which preſs is about fourteen or fifteen hundred weight. In moſt dairies there are two preſſes, and in many three or four, of different weights. The cheeſe is, by ſome, put under the heavieſt preſs firſt, and by others under the lighteſt. Some dairy-women, inſtead of the tin binders, uſe cheeſe fillets, which are a ſtrong, broad, coarſe ſort of tape; one end of which they thruſt down with a thin wooden knife between the cheeſe-cloth and vat, and then draw it tightly ſeveral times round the cheeſe, and faſten it with a ſtrong pin. As ſoon as the cheeſe is put into the preſs it is immediately well ſkewered. The ſkewers are of ſtrong iron wire, eighteen or twenty inches long, ſharp at the points, and turned with a bow at the other end. The vat and tin binder have holds to receive thoſe ſkewers, eſpecially the binder, which holds are ſeldom more than an inch from each other. As the preſs always ſtands cloſe to a wall, only one ſide of the cheeſe can be ſkewered at a time on that ſide; therefore, as many ſkewers are ſtuck in different directions, as conveniently may, leaving as many holes unſkewered as are ſkewered, to give an opportunity of changing the holes. The buſineſs of ſkewering continues till the next morning, at ſix o'clock, and in that time the oftener they are ſhifted the better; every ſecond time of ſhifting them, the cheeſe is turned half-way round in the preſs, to come at the other ſide of it. In half an hour from the time the cheeſe is firſt put into the preſs, it is taken out again, and turned in the vat, into another clean cloth. At this time the edges of the cheeſe are pared off, if they have become ſharp under the preſs (but as the vats are now made uſually with the angles rounded, the paring is rendered unneceſſary) the vat being wiped dry before the cheeſe is returned to it. When the cheeſe is thus firſt time taken out of the preſs, it is the cuſtom in ſome places to put it naked into warm, and in other places into hot whey, where it ſtands an hour or more; it is then taken out, wiped dry, and after it has ſtood till cool, is returned to the preſs. This is done with a view of hardening its coat, that it may ſtand the better. By rarefying the air near the ſurface of the cheeſe, it perhaps may cauſe its diſcharge, and prevent bliſters. At ſix o'clock in the evening, the cheeſe is again turned in the vat into another clean cloth. At this and the former turning, ſome dairy-women prick the upper ſurface of the cheeſe all over, an inch or two deep, before it is replaced under the preſs, with a view alſo of preventing bliſters. At ſix o'clock in the morning it is again turned in the vat, with a clean cloth as before. The ſkewers are now laid aſide. When the next day's cheeſe is ready for the preſs, the former one is again turned in the vat, with a clean cloth, and put under another preſs. At ſix o'clock in the evening, and at ſix in the morning following, it is again turned in the vat, uſing at theſe two laſt turnings two cloths finer than thoſe which were before uſed, in order that as little impreſſion as poſſible from the cloth may remain on the coat of the cheeſe.

Salting-Houſe.—At noon the cheeſe is taken from the preſs (after having been there about forty-eight hours) a freſh fine cloth being put under it, which ſerves only as a lining to the vat; and is not turned over the upper ſurface of the cheeſe, as has been hitherto the caſe.

It is then taken and placed nearly midſide deep in brine, in a ſalting tunnel, or tub; the upper ſurface of the cheeſe being covered all over with ſalt. It ſtands generally about three days in the ſalting tunnel, is turned daily, and each turning well ſalted; the cloth being twice changed in the time. The cheeſe is then taken out of the vat, and in lieu of which a wooden girth, or hoop, is made uſe of, equal in breadth to the thickneſs nearly of the cheeſe: in this it is placed on the ſalting benches, where it ſtands about eight days, being well ſalted all over, and turned each day. The cheeſe is then waſhed in lukewarm water, and after being dried with a cloth, it is placed on the drying benches, where it remains about ſeven days; it is then waſhed in warm water as before, with a bruſh, and wiped dry with a cloth. After it has ſtood about two hours from this waſhing, it is ſmeared all over with about two ounces of ſweet whey butter, and then placed in the warmeſt part of the cheeſe room.

Variation of Management.—On the cheeſe coming into the ſalting-houſe, it is in ſome dairies taken out of the vat, and after its ſides are well rubbed with ſalt, is returned into the vat, with a clean freſh cloth under it; the top being covered with ſalt, it is placed on the ſalting benches, turned and ſalted twice a day, and the cloth changed every ſecond day. On the ſalting benches it is continued ſeven or eight days, when it is taken out of the vat, and with a wooden hoop round it, or cheeſe fillet, is put into the ſalting tunnel, and managed therein as before deſcribed. When cheeſe is ſalted on the benches, before it goes into the tunnel, it is only waſhed once, viz. before it is ſmeared with butter.

In the Cheeſe Room.—During the firſt ſeven days, it is every day well rubbed all over, and generally ſmeared with ſweet whey butter; afterwards a circular ſpace is left, unrubbed, of four or five inches diameter; in the center of each ſide the cheeſe, which, as long as it is afterwards kept, is, or ſhould be turned daily, and rubbed three times a week, in ſummer, and twice in winter. Scraping the rind ſhould be rendered unneceſſary by frequent cleanings. In a warm room, the coat will eaſily be prevented from riſing.

The cheeſe rooms are commonly placed over the cow-houſes, and this is done with a view to obtain that moderate and neceſſary degree of temperature ſo eſſential to the ripening of cheeſe, to which the heat ariſing from the cattle underneath, is ſuppoſed very much to contribute.

The moſt deſirable covering for a cheeſe room, as contributing to that even temperature ſo much deſired, is thatch, for reaſons that muſt be obvious. Before the cheeſe is brought into the rooms, the floors are moſtly well littered with what the farmers here call "ſniddle;" though wheat ſtraw is frequently made uſe of for this purpoſe; but the knots of it are apt to leave an impreſſion in the cheeſe. The afterneath of graſs, well dried, ſeems to be a good ſubſtitute for ſniddle. The labour of turning and cleaning cheeſe is performed almoſt univerſally by women; and that in large dairies where the cheeſes are upwards of 140lb. each, upon an average: this they do without much appearance of exertion, and with a degree of eaſe, which is matter of ſurprize even in this country.

MISCELLANEOUS OBSERVATIONS AND OPINIONS.

CRACKS in cheeſe are ſuppoſed to be owing to the uſe of lime as a manure; to their being expoſed, at any time after taking out of the preſs, to a current of air; but eſpecially if ſo expoſed, before it has ſweated in the cheeſe-room.

Pungency and Rankneſs—are generally attributed to the impurity of ſteep; or, which is nearly the ſame thing, to a neglect in ſcalding the ſteep-cup every day; and many aſcribe it to the want of ſalt, as others think unjuſtly.

Hove Cheeſe.—This is an imperfection derived from flatulence, as the general cauſe. The ſweating of cheeſe is, undoubtedly, a fermentation, and if this proceſs of nature has been regular and complete, the flatulence is thereby expelled, and cheeſe is never ſubject to heave afterwards.

But if the fermentation, or ſweating, has been imperfect, which may happen from a variety of cauſes, indeed from all the cauſes that check other fermentations, the cheeſe will be liable to become hove at any time, by the approach of a thunder cloud, by ſudden changes of the weather from dry to rain; which effecting an alteration in the ſtate of the air contained in cheeſe, will cauſe thoſe to be moſt hove, in which the moſt impure air abounds; and that is in cheeſe made from *rich*, and at the ſame time, *various* herbage; but more eſpecially *clover*, though the cows ſhould paſture *uniformly* upon *it*. Hence it appears adviſeable, to get the cheeſe to ſweat as ſoon as may be, after it comes into the cheeſe-room, as that is the only method to prevent the poſſibility of its heaving, if it be flatulent.

It is ſtrange, however, that ſo far from any means being uſed to give a cheeſe-room the temperature moſt favourable to fermentation, nothing has been done to aſcertain the degree of heat which uſually prevails in it. Every dairy ſhould be furniſhed with a regular ſweating-room. When a cheeſe is made, there is certainly a ſpecific time when its contained air and juices incline to fermentation; and that natural tendency ſhould at that time be aſſiſted. At preſent the whole is left to chance; and at the very period, probably, when a cheeſe is beginning to ferment, the weather becomes ſuddenly cool; if the proceſs is then checked, the incloſed air becomes putrid, eſpecially if the cheeſe has been ill made; and the next fermentation is really putrefactive.

It muſt be admitted, that the more perfectly the whey is got out of the cheeſe, by ſkewering, thruſting, and preſſing, the leſs air will be left in it, and leſs will be the probability of air generating in the cheeſe. Perhaps cheeſe would be leſs ſubject to heave, if it were made of all cold, or all warm milk; viz. of one equal temperature, as the mixing of warm and cold fluids together generates air. The uſual remedy for this evil (heaving) is to weigh it down.

Bliſters—are ſuppoſed to be owing to the ſame cauſes as the former complaint, but they are only a cuticular affection. The remedy is to open the bliſters with a ſharp pen-knife, and pour hot water into the inciſion; then preſs down the outer rind, put on a little ſalt, and place a piece of ſlate and a half-pound weight upon it.

Running out at the Sides.—This is derived from the ſame cauſe as heaving. A cheeſe that runs out at the ſides is ſuppoſed to have been ſhort of preſſing; the remedy is to bind it round tightly with a cheeſe fillet.

Sourneſs.—In hot weather it requires circumſpection to prevent the milk from becoming acid, before it goes into the cheeſe-tub; eſpecially in ill ſituated milk-houſes. Sometimes when the cheeſe is long in coming, it will turn ſour even in the tub, and for this there is no remedy but previous care.

Spongy, Eyey, and Whey-ſpringy Cheeſe.—Theſe faults do not ariſe from want of ſkill in the maker, but from the groſſeſt lazineſs and inattention; ſuch defects are ſeldom heard of in Cheſhire. The certain preventatives are careful breaking, good thruſting, frequent ſkewering, and powerfully preſſing.

The Milk of Cows—which have newly calved, if the quantity of it be conſiderable, has a tendency to cauſe the cheeſe to heave: the firſt meal's milk that goes into the cheeſe-tub, is generally the ſixth or ſeventh from calving. Others never having obſerved this tendency, always put the third meal from calving into the cheeſe-tub.

Paſtures—The frequent change of paſture is thought to be very material to the milk product of cows. In the height of ſummer they have frequently a day paſture and a night-paſture; and this is governed by the circumſtances of water and ſhade; but there are thoſe who prefer a range of paſture, and a frequent change alſo, as moſt deſirable for milking cattle.

Salt.—Twenty-eight pounds, or half a buſhel per week, on the average, is ſufficient through the ſummer for dairies where ſixty pound cheeſes are made, including the other domeſtic uſes of a moderate ſized family. The greateſt quantity of ſalt expended on one ſixty pound cheeſe, that we have heard of, is about three pounds; but how much of that actually remains in the cheeſe, no one is able to ſay: of the ſalt put in it when breaking, much is diſcharged by the thruſting, &c. Whether it acquires much ſaltneſs in the ſalting-houſe, dairy-men themſelves are doubtful, although much ſalt is there expended; but there cannot, we think, be any doubt, that the greateſt quantity of ſalt ever uſed in cheeſe is inſufficient to effect the purpoſe for which it is intentionally uſed, which is an antiſeptic. According to Dr. Pringle (ſee his Obſerv. Diſeaſ. of the Army) it muſt act as a ſeptic; experience, or at leaſt the common practice and opinion ſeem to contradict the unqualified aſſertion, "that ſalt promotes the putreſcency of cheeſe:" but that it does promote it, (though at the ſame time it may vary the natural proceſs of putrefaction in cheeſe) is an opinion, perhaps, well founded. The putreſcency, or ripening of cheeſe, we therefore conclude, to depend much upon ſalt, and is a ſubject that merits inveſtigation.

Number of Women Servants, &c.—There is in general on dairy farms, one woman ſervant to every ten cows, who are employed in winter in carding, ſpinning, and other houſewifry buſineſs; but in milking, the women, both night and morning, during ſummer, where large daries are kept, are aſſiſted by all the other ſervants, men and boys, except the man who drives the team.

Cheeſe Factors. The abſurd cuſtom of making contracts between the cheeſe-factor and the dairy-man, we cannot paſs unnoticed. The bargain moſt frequently is only verbal, and ſeldom any one preſent, except the purchaſer and the ſeller, (ſometimes, indeed, his wife). This vague contract has been frequently broken by diſhoneſt perſons, and although the price is fixed, yet the delivery and payments are often put off from time to time, to the manifeſt injury of the dairy-man, whoſe cheeſe is continually diminiſhing in weight, till it ſuits the *convenience* of the *factor* to come and weigh it. We are but little verſed in commercial tranſactions, yet we preſume, however, to think, that neither in the Eaſt Indies, nor on the deſolate waſtes of Africa, does Britiſh commerce aſſume a much more deſpotic ſhape, than in the cheeſe-room of a Cheſhire dairy-man. The buſineſs of the dairy is, in general, admirably well attended to, by a laborious and careful ſet of women, who are the ſupport, and ought to be the pride of the country: their huſbands degrade themſelves, are ungrateful, in undervaluing the produce of *their* toil and care, and but too often injure themſelves and families, in compliance with the fooliſh cuſtom before alluded to. What regret, therefore, muſt one feel in contemplating the inſignificance of a man who rents three or four hundred pounds a year, and yet dares not free himſelf from ſuch a tyrannical cuſtom!

IMPROVEMENTS.

WITH reſpect to the general improvement of this diſtrict, it is with much diffidence we preſume to give any opinion; but from a haſty view of it, we are induced to think that the moſt material improvement which this county (ſpeaking generally) is capable of, might be effected by means of a proper drainage, as the baſis. Excluſive of the moſſes, or peat bogs, which have been before ſtated to amount to about 20,000 acres, there are alſo numerous tracts of low and marſhy meadow-lands; which either for want of a proper outfall, or owing to the water-courſes not being ſufficiently cleanſed and kept open, are rendered, by land-floods and ſtagnant waters, of little value. Theſe marſhy meadows, together with the whole of that deſcription of land, might, if drained, &c. probably be improved to *more* than *double their preſent value.* There are, indeed, a great number of land-owners and occupiers intereſted in thoſe flat ſituations, who are very deſirous of improving them; but as the properties are generally intermixed, *particular* improvements cannot be effected, without the full execution of ſome *general* ſcheme of drainage. The greateſt bars to ſuch improvement chiefly ariſe either from the uncertainty, or ſhort duration, of particular tenures, or the obſtinacy and perverſeneſs of individuals. We therefore think, that it would not only be much to the advantage of the land-owners and occupiers in general, but alſo greatly to the benefit of the county at large, if an act of parliament, or other powers, applicable to the purpoſes of a general drainage, were obtained; not ſuch as might *operate unjuſtly upon the tenantry*, but ſuch as would compel every individual to contribute towards the general expence, *in proportion to their reſpective intereſts only.* A commiſſion of ſewers, which has lately been obtained, for four of the hundreds of this county, viz. Wirrall, Broxton, Eddiſbury, and Bucklow, will probably be the means of effecting, as far as the powers of it extend, in an equitable manner, this moſt eſſential and neceſſary improvement.

Waſte Lands.—It is not an eaſy matter to aſcertain what proportion of the waſte lands of Cheſhire might, in ſeveralty, be profitably converted into tillage, or paſture land: there are, however, very conſiderable tracts which might be ſo converted; but, we think, the largeſt proportion thereof would be more advantageouſly applied to the purpoſes of planting. The incloſure of waſte lands, with a view to either of the before mentioned purpoſes, is a buſineſs well worth the attention of gentlemen of landed property; the means of promoting ſuch improvements, and of reducing the uſual exorbitant expences of them, is an object well worth the conſideration of the Board. Several conſiderable tracts of waſte lands have of late years been incloſed, and others are now in contemplation.

Roads.—The preſent mode of committing the care of the roads to an officer *choſen annually, and by rotation, without any regard to abilities, &c.* in each pariſh, or townſhip, ſeems to be one chief cauſe of the neglect and inſufficiency of their repairs. Sometimes, though ſeldom, an active intelligent man is in that office; but no proper ſyſtem of repairs being laid down, and purſued, an ignorant, or indolent officer ſucceeding the former, ſuffers what has been properly done to go to decay. The idea of not doing any thing till it is neceſſary, viz. till the way is nearly impaſſable, is too prevalent; and there is little chance of roads left to the care of officers *ſo choſen*, ever being properly taken care of. The following hints are therefore ſubmitted to the conſideration and correction of the Board. The plan which has occurred to us, as moſt likely to remedy the evil complained of, is to empower and direct the juſtices, at their ſeveral quarter-ſeſſions, to appoint proper officers (removable at their diſcretion) for diſtricts of ſuch a ſize, as they ſhall find moſt adequate to the purpoſe, with ſuitable ſalaries, to be paid out of the county rates. Thoſe ſurveyors to have the ſole management and direction of the roads which are put under their care; and to be accountable to the juſtices at their monthly meetings, in the ſeveral hundreds, where ſuch ſurveyors are appointed. The uſual annual ſurveyors to be choſen and appointed as heretofore, and their only buſineſs to be, on proper notice from the diſtrict ſurveyor, to ſummon the perſons liable to do duty in the high ways; and to collect the aſſeſſments within their ſeveral pariſhes, or townſhips. The juſtices to be impowered, on proper application, to make ſuch rates as the nature and publicity of the road may require. Whether it would be proper that the counties at large, under particular modifications, ſhould repair their ſeveral roads, by means of regular aſſeſſments in lieu of ſtatute duty, may well deſerve the conſideration of the Board.

Breed of Cattle.—In the preſent breed of milch-cattle (profitable as they undoubtedly are) the general opinion ſeems to be, that there is very little room for improvement: conſiderable attention having already been paid to them. That there is *ſome* room for improvement, muſt be admitted; it has probably, however, no great degree of reference either to *bone* or *offal.* We have noticed before, that the milch cattle of Cheſhire are frequently continued as milkers to too great an age, before they are ſlaughtered; but we are at the ſame time inclined to think, when the cattle of this county are properly fattened, and killed at a proper age, that our *roaſting pieces* are not inferior in flavour, &c. &c. to thoſe of any other breed of cattle in the kingdom. Much has been ſaid about a waſte of the produce of the land, in the production of bones and offal,—perhaps it is ſo. It cannot be denied, that improvement may be made in the general breed of, almoſt, every county in the kingdom; but ſtill *refinements* may be carried too far; nor is it judiciouſly promoting the ends of ſuch improvements, to induce the country to expect a greater degree of ſucceſs than what, in general practice, is commonly attainable. The profeſſed objects of faſhionable breeders are, to leſſen the quantity of bone and internal fat, reduce the weight of inferior pieces, and add to the bulk and quality of the prime joints; ſuch as rumps, ſirloins, &c. &c. We admit (for the ſake of argument, *what is doubtful*) that theſe objects have been attained; but has it been ſhewn, or can it be proved, that, at the ſame time, when the quantity of bone and offal have been reduced, that there has been, upon the whole, a greater acquiſition of prime fleſh and fat produced at *leſs expence*, than what is attained *in the common practice of the kingdom at large?* If ſuch proofs can be adduced, they will certainly promote the ends in view much more effectually, than the *aſſertions of intereſted individuals.*

Farm Buildings.—It is ſuggeſted, that it might be uſeful if plans of farm houſes and offices, to ſerve the purpoſes of common dairy farms, and others, were publiſhed under the inſpection of the Board of Agriculture, in which utility, œconomy, and neatneſs, might be equally conſulted.

Application of Manure.—There is evidently a miſtaken practice in Cheſhire, with reſpect to the application of manure: it is not, however, an error peculiar to this county, for there are, perhaps, few parts of the kingdom where it is not to be met with. The practice alluded to, is that of laying manure upon land of inferior quality, while that of a better kind remains in a ſtate which wants improvement. This is the general cuſtom of the country, not only with reſpect to manure which is purchaſed, but with that alſo which ariſes from the conſumption of produce on the premiſes. The better part of almoſt every farm in the kingdom is robbed, and in ſome degree impoveriſhed, by attempting to improve, at an evident loſs, the poorer parts of it. Where a farm has juſtice done it, every part in rotation ſhould receive the manure ariſing from its own produce. There are, indeed, ſome inſtances of lands being of ſo rich a quality, either for tillage or paſture, that by laying any manure upon them, an injury would be ſuſtained; but on the whole, it is an evident fact, that any manure whatever, (if not in its nature unſuitable to the ſoil) *will always* be attended with a *much more* profitable return, when laid on *good land*, than it will when laid on land of inferior quality. But how does this correſpond with the general practice of the kingdom? and can any good reaſons be aſſigned for a contrary practice? If a farmer has money to lay out in manure, or if one part of a farm muſt be robbed to enrich another, the moſt profitable manner of applying that manure is, moſt certainly, to lay it on the very beſt part of the premiſes, which is not already too *rich* for improvement. If you converſe with occupiers of land on this ſubject, they will (every one of them) to a man, admit, that one load of manure laid on good land, will be more effective than two, three, or even four or five loads laid upon land of inferior quality. It muſt ſurely then be inconſiſtency in the extreme, to perſiſt in a practice which is againſt the fulleſt conviction of the mind; and that too in a matter where ſelf-intereſt is ſo much concerned.

OBSTACLES IN THE WAY OF IMPROVEMENTS.

THE tax on bricks, in Cheſhire, ſeems injudicious, if not oppreſſive; becauſe it operates much to prevent the moſt eſſential improvement here wanted, viz. under-draining, for which we have *very few* materials that are proper. It would, perhaps, occaſion no conſiderable deduction from the revenue, if a drawback, or allowance, was made to thoſe who uſe bricks for under-draining. This might be done by the collectors of exciſe at their ſittings, upon a certificate from the exciſe-man.

Such a meaſure would greatly promote that ſpecies of improvement which the county, in general, ſeems moſt in need of.

Refuſe Salt.—The duty on foul or dirtied ſalt is an obſtacle, alſo, in the way of improvement. We are informed, that prior to any duty being laid on *foul ſalt*, every perſon wiſhing to uſe it for manure, paid a ſalt-officer to attend and ſee it laid upon the land, or mixed with compoſt. In 1768 a duty of four-pence the buſhel was laid upon it, with a penalty of ſixty pound (two thirds to the informer) if uſed for any other purpoſe than the improvement of land. This duty, it ſeems, was intended to ſupport officers to accompany the ſalt into the country, and ſee it rendered uſeleſs for any other purpoſe but manure; yet no addition of officers took place. In 1782 the duty of four-pence a buſhel was repealed. From that time refuſe ſalt became, and has continued ſubject to the ſame duties as white ſalt. The reaſon alledged for this proceeding was, that ſalt was dirtied purpoſely, and ſold in large quantities, to ſoap-boilers, ſkinners, and others, to the injury of the revenue. The fraud, however, was not practiſed by the farmer, or occupiers of land, in the neighbourhood of the manufactories; but by ſending it free of duty to different parts of the kingdom, *coaſtways*. From twenty to thirty tons, and upwards, had frequently been ſhipped at once, for London, and other places; the importer paying a penalty of 60l. only, was but a trifling ſum, upon a conſiderable quantity, compared to the duty, which white ſalt was ſubject to. The foul or dirtied ſalt (which is the ſweepings of ſtore-rooms, pan-houſes, &c.) has paid little, or nothing, to Government, ſince the time the duty was altered: the preſent duties operate, almoſt, as a total prohibition of it as manure. A difference of opinion having been entertained as to the utility of ſalt as a manure, we inſert the following experiments, which we have been favoured with by a gentleman of Northwich: "After draining a piece of ſour ruſhy ground, about the middle of October, ſome refuſe ſalt was ſpread upon a part of the land, after the rate of eight buſhels to the acre, and on another part ſixteen buſhels. In a ſhort time the vegetation diſappeared totally, and during the month of April following, not a blade of green graſs was to be ſeen. In the latter end of the month of May a moſt flouriſhing crop of rich graſs made its appearance on that part where the eight buſhels had been laid.

" In the month of July the other portion produced ſtill a ſtronger crop; (the cattle were remarkably fond of it) and during the whole enſuing winter (which is ten or twelve years ſince) and to this day, the land retained, and yet exhibits, a ſuperior verdure to the neighbouring cloſes. Another experiment was made in a meadow, where the after graſs being of a coarſe rank nature, which the cattle refuſed to eat, ſalt being laid upon a part of this meadow, they have ever ſince preferred the graſs growing on that ground to every other part of the field, and eaten up every blade. He alſo ſtates, that the good effects of ſalt are particularly ſeen, by mixing it even with the coarſeſt manure. A gentleman lately carried a ſmall quantity of couch-graſs roots, and other rubbiſh, harrowed off his land to the ſalt works, and laid it ſome time on the ground, where the foul ſalt, by the direction of the officer, is deſtroyed; he then carried it back and mixed it with other manure. His barley and his hay-graſs were ſtrong, from this compoſition, beyond his moſt ſanguine expectations. A ſmall quantity of foul ſalt was alſo laid upon a court pavement with a view to deſtroy the vegetation with which it abounded: the firſt ſummer after it was laid on, not a weed or a blade of graſs appeared, but in the ſummer following its vegetation was *conſiderably* more abundant than it was before the ſalt was uſed. Its effects on fallow land are equally advantageous; by ſowing it at the time of breaking up the land for a fallow, its ſtrong ſaline quality deſtroys vegetation, and every noxious inſect; but by being mixed ſufficiently with the ſoil, before the wheat is ſown, it adds a ſtrong nutriment, and inſures the beſt of crops." Salt probably acts as a ſeptic on vegetable ſubſtances; is an excellent manure, and may be uſed in all caſes where either lime or marl are proper. The price of foul ſalt from the ſtoves, if free of duty, would now be about four-pence per buſhel of fifty-ſix pounds; and of ſalt not ſtoved, about two-pence per buſhel. When it is conſidered that the refuſe ſalt, thus unneceſſarily deſtroyed, would be of *vaſt importance* in the agricultural improvements of this county, it is hoped, the Board will be induced to uſe their influence to obtain a relaxation of the preſent duties. And if they ſhould ſee no impropriety in doing ſo, we may venture to ſay, that thoſe very officers and watchmen, who now attend to ſee the foul ſalt deſtroyed, might and would be glad, for a ſmall compenſation from the farmer who came to purchaſe it, to attend him to his land (as was formerly the caſe) without any neglect of their other duty. It would, perhaps, effectually prevent any defraud in the revenue, if the uſe of it was confined to the farmers only, and the ſhipping of it coaſtways prohibited.

Tithes.—In ſpeaking of *obſtacles* to general improvements, the preſent impolitic and, in many inſtances, oppreſſive mode of collecting *tithes in kind*, muſt preſent itſelf firſt to our notice. Their operation, as a bar to improvements, is ſo glaring, and, amongſt diſintereſted men, ſo univerſally admitted, as to need no comment from us. The plan of a commutation for tythes, ſuggeſted by Mr. Pryce, in the fourth volume of the Bath Papers, appears to be *much approved*; and we have, from various quarters, been urged to recommend Mr. Pryce's Eſſay to the moſt ſerious conſideration of the Board.

Leaſes.—It has been mentioned, that leaſing for lives was formerly the practice in Cheſhire; and that at the preſent time the moſt general term of letting lands is for leſs than fourteen years. It may be difficult to explain, clearly, which of the two modes has had the greateſt tendency to *pre-*

vent improvements. There cannot, however, be any doubt, but that ſhort terms of occupation muſt operate to prevent improvement: there are few men ſo raſh and inconſiderate, as to make expenſive improvements, the ſucceſs of which muſt depend upon a variety of circumſtances, without an intereſt of ſufficient permanency previouſly ſecured.

How a Spirit of Improvement may be beſt excited.—The farmers of this diſtrict, upon the whole, have certainly a turn for improvement; but how it might be moſt effectually promoted, is not eaſy to ſay.

By the preſent forms of leaſes, neither the intereſt of landlord or tenant are ſufficiently ſecured. If a tenant lays out any conſiderable ſum of money in permanent improvements, he has but a poor ſecurity that he ſhall enjoy the fruits of his induſtry, and a ſuitable return for the property ſo expended. On the other hand, if a landlord lets a farm, which is in an improved ſtate, what ſecurity has *he*, that the eſtate ſhall be left in as good condition at the end, as it was at the begining of the term? There does not appear to be any adequate ſecurity in either caſe: of the former one, nothing need be ſaid; with reſpect to the latter, we are of opinion, that all the uſual clauſes of a Cheſhire leaſe may be complied with, and yet an eſtate be ſo managed, as to be *much reduced* in value at the end of the term. The preſent leaſes are certainly defective in ſome reſpects; they may prevent an exceſs of bad management; but are not adequate to the purpoſes of either inforcing, or encouraging a ſyſtem of good management. Suppoſe a leaſe was made ſo that (with ſome of the uſual clauſes) it might operate as a bond of arbitration between the parties. At the beginning of the term, let an exact report of the ſtate of every part of the premiſes be made, and ſigned by both landlord and tenant: at the end of the term, let a ſurvey be made by two perſons indifferently choſen, and their award be final. If the eſtate, at the end of the term, was found to be improved, let the award direct what allowance ſhould be made by the landlord for ſuch improvements. If the eſtate, in the opinion of the referees, ſhould appear to have been impoveriſhed, let them be authorized to award the amount of damages to be payed by the tenant. But as ſuch a contract would give a greater degree of ſecurity to the tenant than to the landlord, the landlord ſhould be at liberty to order one or more views of the premiſes to be made during a term of twenty-one years. If any mal-practices appeared to be carrying on, then the leaſe to become void, if from thoſe practices the injury ſhould exceed a certain ſum; and if the injury ſhould not exceed that ſum, then the tenant to be anſwerable for damages only. There are objections which may be made to ſuch a leaſe; but are they greater than what might be urged againſt the preſent modes of letting land? and would not ſuch leaſes, on the whole, be liable to fewer objections, and be more likely to encourage and ſecure improvements, than what the preſent uſual leaſes are?

High Rents.—The idea that high rents operate as a ſpur to improvements, ſeems to be too prevalent; as far as an advance of rent can ſo operate, it has been very freely applied in many parts of this diſtrict, and perhaps with greater freedom than ſucceſs. We think, that gentlemen, by going too far on this plan, not only check, but in a great meaſure extinguiſh the ſpirit of improvement. The zeal of thoſe who expect improvements, *by ſuch means*, overlook the *neceſſity* of the perſons who will comply with the terms propoſed; and they alſo forget, the abſolute neceſſity of a ſufficient capital. A man of property is generally cautious of making an engagement where the rent is oppreſſive. He ſees the ſucceſs of thoſe who inveſt their capital in trade, and thinks himſelf (with juſtice) intitled to ſomething more than common intereſt for his money; and to an adequate return for his labour and attention. But thoſe men who have the leaſt to loſe, are commonly the moſt forward to offer the higheſt rents. Let a farmer be ever ſo enterprizing and intelligent, yet if he is ſkrewed up in his rent to the utmoſt, ſhackled by a ſhort or precarious tenure, or in want of a ſufficient capital, he will not have the courage to attempt, nor the *means* to accompliſh any material ſchemes of improvement; but reverſe thoſe circumſtances, and he will then give ſcope to his genius, and complete ſuch improvements as muſt, in the end, conduce to the landlord's intereſt, to his own emolument, and to the benefit of the public.

Premiums, &c.—The Agricultural Society at Mancheſter has produced, from time to time, ſome good effects in this diſtrict; but has not excited that general ſpirit of improvement in agriculture, which was ſo laudably intended by the ſociety. Premiums, as an encouragement to particular modes of huſbandry, or improvements, in any country, where the prevailing ſyſtem of practice is different to that propoſed, have little or no effect with common practical farmers.

The judicious cultivator, however, wants no pecuniary reward to ſtimulate his induſtry, and ſpur him on to rational improvements: nothing more is wanted, than to convince him that the thing propoſed is attainable in *common practice*; and that it is more eligible and advantageous, than what he has been accuſtomed to. If that can be done, the improvement, whatever it may be, carries with it, in itſelf, a more ſubſtantial reward, than can be conveyed by any other common means. Without ſuch a conviction, any attempts to encourage improvements, through the help of premiums, will probably be found expenſive, and in the end fruitleſs.

Much injury has, doubtleſs, been done to the cauſe of agriculture, by the ſanguine, partial, and exaggerated ac-

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APPENDIX

TO THE

AGRICULTURAL VIE

OF THE COUNTY OF

CHESTER.

counts of fancied improvements of *book farmers*. In almoſt every neighbourhood there are ſpeculative men, of an enterpriſing turn of mind, who have a taſte for agriculture; who read the various publications on that ſubject; and are forward to put in execution each newly ſuppoſed improvement. The real practical farmer obſerves cloſely theſe lettered experimentaliſts; and ſeeing, as he too often does, a tedious and expenſive proceſs end in diſappointment, his prejudices are ſtrengthened, and he ſneers at what he contemptuouſly calls *book-farming*. It is an eaſy thing for a man to ſit in his cloſet, and, without any reference either to ſeaſons, markets, or the objects of general practice, in particular diſtricts, to frame ſuch a courſe of crops as he may think applicable on all ſoils, in all ſituations; to ſuggeſt implements of huſbandry equally well adapted to every required purpoſe; to recommend different ſorts of ſtock ſuitable and proper for every kind of ſoil and climate; and to chalk out what he may conceive to be proper plans of management, applicable to every neceſſary occaſion of huſbandry. But when he has ſo done, even though his ſchemes of improvement may be ſanctioned by the *appearance* of actual experience, yet it will avail but little; there muſt be ſomething more than mere aſſertion, for the reaſons before alluded to, to have due weight with the generality of farmers: the proofs, as to profit or loſs, muſt lie open to their own obſervation. This train of reaſoning naturally leads us to ſuggeſt the propriety of eſtabliſhing, under the immediate direction and patronage of the Board, farms of *actual experiment*, in various parts of the kingdom. This is a plan which has long been thought of; but ſhould it be carried into execution, upon an extenſive ſcale, and the different farms be conducted by men of real experience and knowledge (upon a proper ſyſtem of œconomy and prudence) it would, as we think, more effectually promote the laudable and patriotic intentions of the Board, than could be done by any other means whatſoever.

A portion of the Crown Lands could not, perhaps, be better appropriated than to eſtabliſh a fund for ſuch a purpoſe,

Farming Intelligence.—We cannot reſiſt adding, (on the ſubject of improvement) that if, under the ſanction of the Board, a farmer's price-current was to be publiſhed weekly, or once a fortnight, in which the current prices in each county, of all the different kinds of agricultural produce, were to be accurately ſtated, and ſuch other occaſional intelligence given, as might be worthy of notice in the farming line, we are of opinion that ſuch a publication would meet with general approbation; and that it might, in a great degree, be the means of *leading* to that ſort of inquiry, and to a deſire for that kind of information, which it is ſo much the wiſh of the Board to promote and encourage.

APPENDIX.

No. I.

ON THE POOR LAWS.*

LAWS are made in vain for the regulation of a community, if individua do not endeavour to support and enforce them by their influence and example We derive from our own inattention and supineness, much the greater part o the evils we complain of.

The only places which seem capable of benefit from poor-houses, are large manufacturing towns. The employments of the inhabitants are chiefly sedentary and may be pursued to advantage within their walls. The country can reap no emolument. Agriculture and husbandry cannot be taught within the narrow confines of a poor-house. Those arts, therefore, which should be first objects in every nation, must, in some measure at least, suffer, and be deprived of many valuable labourers. Population is prevented; a bold, hardy peasantry is exchanged for a race of meagre, pallid wretches, broken spirited by the servile submission exacted by the petty tyrants of those regions; who lose the honest pride, and even the hope of independence, by their subjugation. Their offspring, if it be their misfortune to have any, are trained in the same way, and ignorant of a bette state, attempt not to seek one. Their progeny will of course follow thei example, and future generations will see their descendants in the same servile disgraceful, and burthensome situation. Institutions which lead to such consequences, may suit the meridian of despotism, but should be for ever banishe from among a free people.

Paupers, when taken into a poor-house, are obliged to give up all their littl property, to submit to avocations destructive to their healths, and to yield u every wish of liberty, social connections, and domestic happiness, to restraint an correction. In return for all this they obtain food, raiment, and a shelter: a poor inadequate recompence for the loss of every thing that is dear and valuabl to man.†

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* Extracted from a pamphlet, written in 1776, by a respectable gentleman in Flintshire.

† Many poor people, for those reasons, pine in secret wretchedness, rather than apply for reli which they shall not have on any other terms; and we, in an age which boasts of sentiment and refinement, take advantage of their feelings, and leave them to distress. It is not long since a reveren clergyman insisted upon badging out his parish poor. He knew their pride would starve them o the parish books. An American savage would blush at the relation; yet our laws authorize the stigmatizing practice.

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The elegant Commentator[*] on the laws of England says, "that providing stocks for the poor, to be worked up at home, would be more beneficial than accumulating all the poor in one common workhouse: a practice which tends to destroy all domestic connections (the only felicity of the honest and industrious labourer) and to put the sober and diligent upon a level, in point of their earnings, with those who are dissolute and idle."

The bosom of humanity heaves with distress at the confinement of our fellow creatures, whose only crime is poverty. Be they ever so dissolute, perpetual imprisonment is too severe a punishment: it is also inefficacious. Ignominy generally confirms criminal habits. Britons of the lowest ranks hold poor houses in an ignominious light.[†]

All attempts to correct bad habits, and to inculcate moral duties, in houses of industry, have been hitherto very unsuccessful: if one is vicious, he communicates his propensities to the whole corps. In common society, vice is but scatteringly found; in a pent up croud, it pervades and contaminates the whole mass.

It is indeed a melancholy truth, that the poor are, at large, not very rigid moralists. Every humane mind will attribute it to a repining consciousness of the humiliating inferiority of their condition, and the misleading examples of the higher ranks of society. Such reflections and observations have too fatal a tendency to make them indifferent to industry and good order. They squander their time in idleness and drunkenness, till harassed by their debts and necessities, some are driven by despondency to infringe the laws of their country, and fall victims to their crimes: others drag a miserable existence in penury and distress, wretched in themselves, and burthensome to the community. The gloom attending restraint, is more likely to increase, than to correct such a disposition.

There are numerous instances of the managers of poor-houses acquiring rapid fortunes in their places; they are more probably embezzled from the *overflowings* of the fund, the surplus of the poor's allowance, or the profits of their labours, than from any saving they can make out of their own salaries.[‡]

One cause of the poverty of many wretches is obviously to be found in those pests of society, tipling-houses. The strictest attention of the magistrate, and the vigilance of every individual, should therefore be directed to remove, or reform them; the licence of every one, where a single drunkard is seen, should be vacated, and the censures of the law enforced against the sot of every rank. A drunken magistrate must condemn a drunken beggar with a very bad grace, and a worse conscience.

There are numberless little ale-house keepers, who amass fortunes, by lending small sums of money to labourers. The unhappy borrowers are obliged to spend great part of the loan at the time of borrowing; and, on payment, must not fail to be liberal in their calls to the hostess. Can such unfortunate wretches possibly escape ruin, distress, and poverty?

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[*] Blackstone, b. i. c. 9.

[†] Lord Kaims, in his Sketches of the History of Man, considers poor-houses as injurious to society, and destructive of industry in the poor. He condemns our whole system in the gross, as the cause of all our evils. He gives a striking contrast of two French poor-houses, b. ii. sk. 10.

[‡] Montesquieu, in his Spirit of Laws, instances a Marquis of Rhodes, during the contest for the Spanish Succession, who was ruined by gold mines, and enriched by hospitals. He shrewdly remarks, "Il en a voit, en quelque part, la direction."

If, Sir, it shall be thought that the scheme proposed in parliament is inadequate to its great design; if, moreover, the present mode of relieving the poor is allowed, by all men, to be burdensome and injurious, I hope I shall be acquitted of impertinence, in offering the outlines of a plan, upon somewhat different principles

I will first take a cursory view of the provisions for the poor, before the Reformation; the laws and advantages of a national taxation, which followed that event; and the state of some parishes, which have not been at all rated.

The first idea of the maintenance of the poor, in Christian countries, was borrowed from the doctrine of charity and universal benevolence, so strongly inculcated in the Gospel.

In obedience to that doctrine, we find, in the earliest periods, frequent exhortations to the people to be liberal to the poor; and when nations had embraced the Christian faith, they followed the Jewish institution of tithes, for the support of the poor, and of the ministers of religion. It was fitting that men who had forsaken all worldly advantages, renounced all property, and devoted their lives to the salvation of others, should be maintained by those, for whom they interceded with their Creator, and to whom they left the acquisition of riches.

Those provisions remained for centuries, however, only voluntary alms.* Mr. Selden has copied from Cassian the grateful acknowledgments of a pious Abbot, on receiving an offering of tithes for the poor. "Devotionem hujus oblationis (cujus dispensatio mihi credita est) gratanter amplector, quia, fideliter, primitias vestras, ac decimas, indigentium usibus, futuras, velut sacrisicium domino bonæ suavitatis, offertis."

When the payment of tithes became a civil obligation, established by custom, and the acquiescence of mankind, † "a fourth part, only, was appropriated to the poor." As the clergy increased in numbers, in wealth and power, their negligence of the poor also increased, and became at length so glaring, that in England, the great council of the realm found it necessary, earlier than the time of Edward the First, to ordain,‡ "that the poor should be maintained by parsons, rectors, and the parishioners." How strange! that the holy precepts of religion could not deter the immediate ministers of it from rapacity and avarice!—It is the happiness of the present age, to see moderation keep pace with power in the venerable preachers of the gospel.

The monastic institutions were also intended for the support of the poor, as well as the religious devotees; several of their orders were exempted "ab omni servitio terreno, et exactione seculari," ¶ for that express purpose.---The poor were relieved by them, with, perhaps, too little discrimination.---They were, in fact, as much the resources of the profligate, as the asylums of the distressed.

At the time of the dissolution of monasteries, our Eighth Henry forgot, in the rage of reformation, and in the heated zeal of political theology, that the poor were robbed by his resumptions, and the nation oppressed by an uncommon inundation of beggars from that source.

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* History of Tithes, c. 5th.

† Spelman.

‡ Mirror.

¶ Dugdale's Monasticon.

The great men were silenced by grants of the scites of the ruined abbies, and the multitude were over-awed by their power, or amused by the novelty of reformation, and the erection of a few handsome churches.

Had those grants been incumbered with their former obligations, we should not now lament the loss of religious houses; and were but the fourth part of the tythes still applied to the use of the poor, we should have less right to repine at the rigorous exactions of tythe-gatherers. We should also be exempt from parochial levies for church and poor.

It is scarce possible (when we have considered this revolution in our religious system, and the consequences of it) to refrain from smiling at the serious suggestions of the statutes of Henry the Eighth on this subject, " That the poor were strangely increased." There could be little strangeness in the effect of so well known a cause. But we must not treat with levity an act of legislative wisdom.

There is little doubt of the humane and beneficial tendency of the statute of 43d Elizabeth, which you speak of, had the really beneficial parts of it been carried into execution; but I am inclined to think there was more policy than humanity in the motives for enacting it, and the previous statutes, of which it was the ultimate improvement.

It was necessary, after the Reformation, to prevent an inquiry into the real cause of the astonishing number of common beggars and impostors, which suddenly infested the streets and highways; and the frequent robberies and pilferings, which were committed all over the kingdom. It was also necessary to smother the complaints of the thinking part of mankind, which were indefatigably incited, and supported by the Roman Catholics, who attributed all those evils and inconveniences to the Reformation—Perhaps with some justice.

For those purposes Henry began the present legal obligation to maintain the poor. In his reign appeared the first compulsatory statute. Rigorous punishments of all able poor, who would not work, were enacted; but no means of employing them were thought of, till the reign of Edward the VI. when materials were directed to be provided for them.

The temper of all the laws of those times was much alike; they rather bespoke a desire to get rid of the burthen of the poor, than to provide for them, because they were distressed. The two hospitals of Christ and St. Thomas, built by Edward the VI. were the only asylums of the impotent. The murmurs of the people, at the loss of religious houses, were, under that pious and peaceable young Prince, more distinctly heard, than during the tyrannic reign of his father.

The statute [*] against erecting cottages appeared about the same æra. Its import and tendency were to prevent the increase of the poor, by depriving them of places of habitation. Such regulations favour little of Christian charity. Sir Edward Coke [†] passes high encomiums on that law, and severely animadverts on cottagers and inmates. Better policy, and a singular prosecution, [‡] attempted under its sanction, influenced the legislature lately to repeal the absurd restraint.

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[*] 31st Elizabeth. [†] 2d Inst.

[‡] A gentleman was indicted in the Chester circuit on this statute, in the year 1774. The learned judges, before whom it was tried, expressed their abhorrence of the proceeding, and of the statute; and with a zeal for the rights of mankind, which distinguishes their characters, and does honour to humanity, caused the bill to be brought into parliament the following session, which destroyed forever that means of oppression.

Many parishes put those laws immediately into execution. They levied rates, they relieved the distressed. Their poor and their rates increased together; and we are now coolly told, that in many places the rates exceed a fifth, in some a fourth, and in others a third part of the full value of their lands!

A parish that was first rated in the beginning of this century, raised about the year 1740, thirty-five pounds for the relief of the poor: it has since gradually increased to the enormous amount of seven hundred. [*] If parishes, which were earlier charged, have increased in the same proportion, their burden must be intolerable.

Whilst that parish was not burdened with this tax, objects of charity were few, and happy in the extensive bounty of the opulent, and the cheerful donations of the peasants. A shoal of strangers who came to work in the mines, which abound in its neighbourhood; and who, through the unguarded simplicity of the inhabitants gained settlements, brought with them the customs and regulations of their country. Among others, the poor rate, and its invariable effects, a numerous and dissatisfied poor.

In several parts of the kingdom, poor rates have been but very lately levied. There are some counties, and many parishes, particularly in North Wales, which do not yet raise them. The few indigent among them are supported by voluntary contributions.

It is generally true, that man is so impatient of controul, that he will refuse, as a duty, what he would cheerfully perform, from the mere impulse of his own feelings. The position is evinced in observing the different dispositions of people, in rated and unrated parishes.

In the latter, the benevolence of all ranks to the poor is very great, their bounty is dispensed with pleasure, and received with gratitude: in the former, the ear of humanity is deaf, and her hand closed against the intreaties of poverty and distress. If the wretch is a stranger, he is driven out with stripes; if a parishioner, he is directed to his parish officer. The relief which the overseer hath power to give, is often insufficient, and often "the insolence of office spurns the supplicant from his door!"

An exact computation of the number of beggars in those contrary situations would be a work of much labour; but, if I may be allowed to judge from the frequency of applications, there are full as many common beggars, in rated as unrated parishes.

A learned judge, of one of the Welch circuits, lately attempted to persuade the inhabitants of some counties within his jurisdiction to adopt the poor rate.[*] He even threatened to punish them for non-compliance. His Lordship's humanity was misled by the transient intreaties of a few beggars at his door. He is (I doubt not) now convinced of the cruelty of forcing a burden upon the industrious inhabitants, which they have seen so grievous, inefficacious, and irremoveable in other places.

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[*] Another neighbouring parish, about forty years ago, levied no rate. It now pays near eight hundred pounds.

[*] Since this pamphlet was written, several parishes in the remotest parts of North Wales have raised poor rates, and they have increased rapidly.

There cannot remain a doubt, but our evils have originated in the dissolati monasteries, the loss of tithes, and the invention of poor rates. It now mu impossible, in places where rates are established, to shake off the incumbrance: viation is their only hope. But parishes, which have hitherto escaped, sl carefully avoid rating themselves.

It is an indispensible duty on the rich and powerful, to relieve and cheris indigent and wretched. The mutual dependance of mankind, the obligatio religion, and the interests of society, strongly enforce it. No sanctions can c a right of property, exempt from the claims of humanity.

The thing desirable in the poor laws is a mode of taxation and relief, in w all poor persons would be interested by contributing to a common fund, an receiving allowances proportioned to the contributions

The plan I would offer is upon the principles of the associations so well kn in this kingdom by the name of *Beneficial Clubs*. The members of those as associations contribute very trifling sums to their funds, by weekly, monthly, or periodical payments;[*] and it is observable, that not one has failed of being in a few years, to make very comfortable, and some very large, allowanc to members, who by sickness or misfortune become objects of relief.

If the associations where every member is intitled to the benefit, and whe many are relieved, succeed so well, how probable is it, that a fund, to whi ranks of men would be obliged to contribute according to their abilities from which the poor and distressed only could demand assistance, might least equally successful? I will illustrate my proposition by the scheme of a now existing. It was originally an association of about fifty members, whi annually, by stated periodical portions, twelve shillings. They suffered the to accumulate without deduction for three years. It amassed the sum of 94l at simple interest. Since that period, any member falling sick of any curab violent disorder, receives ten shillings weekly during his illness, deducting his proportionate contribution to the fund. But if his disorder be slow an lingering, from which he is deemed incurable, he is made a pensioner for life, w weekly allowance of five shillings; and at his death, his representatives are in to twelve or fourteen pounds from the fund.

The club has subsisted about twenty years, and, notwithstanding the many persons it must have relieved and buried, hath a large sum of money at interest, a is in every respect, in a very flourishing state.

New members are admitted on paying a fine, and contributing during the s the same time, before they are intitled to relief.

The association hath an excellent regulation; any member may borrow a s sum from the fund, at legal interest, on giving surety to the stewards; the p principal is seldom called in during his life, and is always less than what his repres representatives would be intitled to at his death. Such a timely aid preserves many arti from ruin, and prevents any loss of interest, by the principal being unemplo That part of their plan might be applied to advantage in a parochial scheme of

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[*] In Chatham and Sheerness dock yards, the impotent dock-men are maintained by a simila contribution. But many of them receive no benefit from the fund they thus support; because it i parochial levy within the ſtatute 3 & 4 William and Mary, to gain a settlement by the paymen Vide. Burrow's Settlement Cases, 199.

nature; and many families kept from being burdensome, by having the means of setting up some little trade.

In a public association, all inhabitants should contribute according to their possessions, and artificers and labourers according to their wages. These, with the donations of the opulent, and the consolidation of parish monies and property, would in a few years raise a fund more ample, and capable of greater liberality than the stock of any club.

To apply what has been premised—Suppose a parish, containing fifty inhabitants, ten of them in opulent, or at least easy circumstances; ten above the danger of becoming burthensome; fifteen servants, and fifteen labourers.

The ten of the first order, holding upon an average tenements of the value of fifty pounds per annum each, amount in the whole to the rent of - - - - - - - - - -	£500	0	0
The ten of the second order holding fifteen pounds per annum each,	150	0	0
The fifteen servants, receiving wages of forty shillings upon an average, - - - - - - - - - - -	30	0	0
The fifteen labourers, estimated by the same ratio, as their gains above maintenance, - - - - - -	30	0	0
Total - -	£710	0	0

Suppose the sum total, contributed after the rate of one shilling only in the pound, the yearly produce would be thirty-five pounds ten shillings.

If suffered to accumulate for 3 years, it would make at simple interest	£111	16	6
Suppose the parish had old benefactions, amounting, for the sake of an even sum, to	88	3	6
The parochial stock would, at the time of first drawing from it, be	200	0	0

Suppose at that period there should be six relievable objects, between families and single persons, who would be burdensome through the year; that is, one fifth part of the thirty, between servants and labourers, who, from their situations, would be likely to be chargeable.

Allow them, upon an average, three shillings per week each; the yearly outgoing would be forty-six pounds sixteen shillings; the interest of stock, and the annual contribution, amount to forty-five pounds ten shillings. There would therefore be a deficiency of one pound six shillings.

I think I have allowed more than the largest possible portion of poor to rich; and exceeded the highest estimate of human infirmity; yet the deficiency is too inconsiderable to be mentioned, and the contribution is only one fourth part of the rate proposed to be fixed by the poor-house plan.

I have omitted all occasional benefactions, and all contributions in respect of personal property, in order to shew the most unfavourable aspect of the scheme. Let us place it at another point of view, in contrast with the club.

The parochial fund exceeds the club in stock, by its own accumulation, at the end of the given time, by seventeen pounds six shillings and six-pence.

Every member of the club is equally liable to sickness, and equally intitled to relief.

or enter into business or service, his contributions
d be bound to enroll himself a member of some as-

nly might be made the general settlement. It might,
le, that the relief to a child should come from the fund
ntributed. Unknown orphans would be the only ex-
n.

ate children should be obliged to give immediate security
um, to some fund, for their maintenance; and likewise
contribution, to entitle them to the relief under impo-
ome able to pay for themselves. It would be a suffici-
ntinence; an ample indemnity to the public; and a
nts.

tute of Elizabeth, respecting manufactories, for the em-
, in their own houses, might be pursued. All kinds of
ensils might be made by them. They would save the
nust arise in buying those articles from other places.
manufacturer, by allowing him profits according to the

* well saith, " That providing stocks for the able poor
and in hand with the other regulations of the statute
lect of that wisest provision in the statute, is one evi-
of our poor rates.

er officers wanting for conducting the plan I propose,
have: or if overseers, in the nature of the present
hought more eligible, they might be continued. A
men of rank and fortune, would be a sufficient check
ecessity of a new denomination of officers.

dent to allow some small salary to the officers, for their
conducting the employment of the poor, in delivering
eir work, and in directing common labourers. It would
d diligence.

venience, every person should be obliged to bring his
g-officer, on certain fixed days: the rich, on pain of
, under a small forfeiture, and less allowance when
s of relief. It would be the particular interest of the
ipend against distress and misfortune; and the advan-
to save the penalties, which should be peremptorily

which a charitable subscriber to their funds may no-
nevolence. If men of fortune would apply an annual
y would relieve the distresses of the impotent more
their doors.

ment of the present beneficial plan, if the money pay-
of members was continued in the fund, and an ade-
ade to the widow or orphan, during sickness or impo-

tence.

Commentaries, b. i. chap. 9.

f a nature that will not harden by moisture. Salt promises
ifferent purposes, for it will prevent the soil from being
nd also invigorate the same by its retentive, alkaline, and
suggestions almost amount to a proof, that common salt is
, which, when properly used, will prove to be the real
nt, so essentially necessary to prepare matter proper for
but all its merit is of little worth, so long as it is sub-
y imposed by the legislature. If Government would be
hese remarks, and abolish the duty, and substitute in its stead
of three-pence in the pound, it would raise more net money
han the present duty. Salt would then be the cheapest, best,
anure in nature; and also be the means of advancing botany,
branch of agriculture, with chemistry and all the metallic
ee of perfection. Before the prohibition of foul salts, when
o turn his lands to tillage in autumn, he sowed a double
der to destroy grass, rush, weeds, gorse, fern, broom, worms,
was, by that means, converted into a rich manure, which
eding crops, and left the soil, after all, in good condition.
tion appears superior to any other. Some farmers have
eight of salt on one acre of land, as soon as ploughed, in
soil, before the seed was sown. They have also laid on
soon as cut, and pasture lands, in the winter, about the

e procured duty free, it may be presumed that all parks, lawns,
ens, hills and mountains will exhibit as rich a verdure as a
ually prevent the rot in sheep, deer, and rabbits. Salt would
sts, hot-houses, hop-grounds, &c. It may then be used
the West India islands, for the culture of sugar-canes, in-
all other crops of those countries; as it will save great
g weeds and reptiles; besides supporting the growth of
n of moisture in those hot climes. Fruit trees and plants
round them, several times in the year. Every load of hay
of salt scattered on it when housed; which will cause the
and to feed nearly equal to grass. Cows, horses, &c. should
in almost every feed of ground corn, grains, &c. Spruce
salt, should be given to cows and horses at any time when

mon salt to mankind, for culinary purposes, is so well un-
edless to expatiate on that subject: yet as its medicinal vir-
known, I beg leave to recommend the following bath as a
odate those whom business, distance, or inability prevents
fit of sea bathing.
o bathe every Saturday night, in a warm bath, made with
each gallon of soft water, or with sea water.
of common Glauber's salt should be put into a bason of
, in lieu of India tea, for the family's breakfast.

Chemistry, and the metallic arts, would require great quantities, if salt were reduced to a moderate price.

Some French chemists at Liverpool have obtained a patent, for the use of a pure alkali extracted from common salt, superior to pot-ash, for the bleaching of calicoes, muslins, &c. It gives them immediate colour, and silkiness similar to India goods. They also extract from salt several other degrees of alkalies, for the manufactories of soap, glass, &c. but the high duty prevents their general use.

If the legislature were to substitute the aforesaid tax, the revenue would be advanced more than double, and, at the same time, save to the nation several hundred thousand pounds, expended annually on imported alkalies.

A minister merits reproach who lays a duty, equal to a prohibition, on any article that would so essentially promote the interests of agriculture. High duties may be proper when there is a probability of the article being exhausted, which makes it necessary to limit the consumption; but that is not the case with salt, for on a thorough investigation of the salt rocks, and springs in Cheshire, they appear sufficient to supply the demands of all Europe for ever. The rock lies about thirty-six yards below the surface, in thickness from ten to forty yards; covers a tract of twenty miles in length, with some miles in breadth; and over the whole district arise springs, which are generally made into salt. Coals too are there plentiful.

At Droitwich in Worcestershire, in Lancashire, and several other counties, are likewise good salt springs; besides quantities of salt are procured from sea water.

Great Britain contains about twelve millions of people, and its produce barely sustains them; and when any season of the year happens to be unfavourable, the inhabitants are alarmed at the prospect of famine; but when salt is brought into general use, the lands of Great Britain will maintain ten times twelve millions of people; for it is a certain support to vegetation, when extra heats and colds are predominant. The land-owner will then reap such plentiful crops, as to enable him to pay cheerfully all the wants of government; for the consolidation of the taxes the legislature should always have in view. The manufacturer will then live cheap, and also be freed from those shackles which now retard his progress. This, and this only, would enable us to rival every other state, and would also be the means of raising this nation to an incredible height of opulence and power.

A petition from the Royal and Agricultural Societies should be presented to Government, praying the indulgence of salt, duty free. Experiments would then be made throughout the kingdom, and its excellence and utility, as a manure, &c. I humbly apprehend, would be fully demonstrated and confirmed.

Salt without duty would be from ten shillings to thirteen shillings per ton.

FINIS.

A
GENERAL VIEW
OF THE
AGRICULTUR
OF THE COUNTY OF
LEICESTER.

A

GENERAL VIEW

OF THE

GRICULTUR

OF THE COUNTY OF

LEICESTER.

ITS

ITH OBSERVATIONS ON THE MEANS OF ~~THEIR~~ IMPROVEME

By JOHN MONK,

of the

(LATE 19th LIGHT DRAGOONS)

KING

OF BEARS-COMBE, NEAR ~~KNIGHT~~SBRIDGE, DEVON.

Gt. Brit

AWN UP FOR THE CONSIDERATION OF THE BOARD OF AGRICULT

AND INTERNAL IMPROVEMENT.

LONDON:
PRINTED BY J. NICHOLS.
M.DCC.XCIV.

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TO THE READER.

IT is requeſted that this paper may be returned to the Board
culture, at its office in London, with any additional remarks an
vations which may occur on the peruſal, *written on the margin*,
as may be convenient.

It is hardly neceſſary to add, that this report, is, at preſent, pri
circulated, for the purpoſe merely of procuring farther information,
ing the huſbandry of this diſtrict, and of enabling every one, to co
his mite, to the improvement of the country.

The Board has adopted the ſame plan, in regard to all th
counties in the united kingdom; and will be happy to give every a
in its power, to any perſon who may be deſirous of improving h
of cattle, ſheep, &c. or of trying any uſeful experiment in huſba

LONDON, FEB. 1794.

INTRODUCTION.

LEICESTERSHIRE is bounded on the Eaſt by Lincolnſhire and Rutlandſhire; by Staffordſhire and Warwickſhire on the Weſt; by Derbyſhire and Nottinghamſhire on the North; by Northamptonſhire on the South. It extends from Eaſt to Weſt about thirty miles, from North to South about 25; and its circumference is about ninety-ſix miles. It is divided into ſix hundreds, and is ſuppoſed to contain about 560,000 acres of land.

Rivers. The chief rivers that water this county are the following; the Soar, the Swift, the Avon, the Welland, the Wreke, the Anker.

The Soar riſes about the midway between Hinckley and Lutterworth; and, paſſing by Leiceſter and Loughborough, falls into the Trent on the edge of Derbyſhire.

The Swift riſes in this county, and, paſſing by Lutterworth, ſoon leaves it, and flows into Warwickſhire.

The Avon riſes in Northamptonſhire, and only waters the South-Weſt edge of the county.

The Welland riſes near Harborough, paſſes by that town, and, continuing its courſe from Weſt to Eaſt, divides this county from Northamptonſhire, and enters Rutlandſhire.

The Wreke riſes in the eaſtern part of the county, and, paſſing by Melton Mowbray, falls into the Soar above Mount Sorrel.

The Anker riſes near the ſource of the Soar, and, running north-weſt, and dividing this county from Warwickſhire, falls into the Avon. Beſides theſe rivers, there are many rivulets.

Market-days. Leiceſter and Aſhby de la Zouch on Saturdays; Hinckley on Mondays; Melton Mowbray and Harborough on Tueſdays; Loughborough and Lutterworth on Thurſdays.

The above are the markets of moſt conſequence in the county: there are two or three others, but not worth mentioning.

Soil and climate. The ſoil in the county at large varies pretty much, from a light ſandy, or gravelly loam, to a ſtiff marly loam, including all the intermediate degrees poſſible between theſe two extremes. Very little of the land can (with propriety) be called a mere ſandy or gravelly ſoil; nor is there any great quantity of it that may properly be called clay. The beſt ſoil is generally upon the hills; and the worſt, or neareſt approaching to clay or cold lands, in the valleys; though there are many exceptions from this rule. The ſoil, or what the farmers generally call *mould*, is generally deep, which makes it very proper for graſs, ſuch deep ſoils not being very ſoon affected by dry weather.

About LUTTERWORTH, ſome part is a light rich loam, excellent for turnips and barley; a part ſtiff, inclining to marl, or rich clay; the remainder chiefly a ſort of medium between both, with a ſubſoil inclining to marl, bearing excellent crops of oats and wheat, and good turnips alſo, though not ſo well adapted for their being eat off the land with ſheep.

Round **Hinckley**, moſt of the land is a good mixed ſoil, and bears great crops of graſs, &c.

Ashby de la Zouch, and the northern part of the county. The ſoil here is various, ſand, gravel, loam, and clay, but moſtly clay.

Melton Mowbray. The ſoil in this part of the county is in general a heavy loam; and immediately underneath, a very ſtiff impervious clay, mixed with ſmall pieces of lime-ſtone. Theſe lands are very wet in winter, and the turf ſo tender as ſcarcely to be able to bear the treading of ſheep at that ſeaſon without injury.

Market Harborough. The ſoil here in general is a very ſtrong clay, chiefly in graſs.

The **Climate** is very temperate in general, as there are no mountains, lakes, or rivers, near, that have any material effect on the climate. The whole county is well watered.

The manner in which the land is occupied, &c. The general ſize of farms is from 100 to 200 acres, though there are many much more extenſive, and many much under 100, eſpecially in the neighbourhood of great market-towns, which are occupied by tradeſmen or manufacturers. The greateſt improvements are made on large farms, from 200 to 500 acres; many of which are occupied by the proprietors themſelves, and chiefly in the northern part of the county.

Manner in which the land is employed. The land is employed for the moſt part in paſture for ſheep, dairies, feeding

ing neat cattle, a conſiderable part for breeding horſ
and a proportionable quantity in meadow for hay for w
ter uſe. The farms employed chiefly for dairies, of wh
there are a great number, have always land in tillage
produce ſtraw, turnips, &c. for the cows in winter.
farm of 200 acres may perhaps have about thirty or fo
acres of various ſorts of grain, &c. Thoſe pariſhes wh
the land is of an inferior quality, have a greater proporti
of arable ground than where the ſoil is richer.

About Aſhby de la Zouch, and Loughborough, th
parts in four are in paſture. Near Melton Mowbray, th
is very little arable, not more than one acre to thi
Market Harborough has alſo very little arable. The p
ture near Lutterworth is in proportion of eight to o
At Hinckley, five parts in ſix are in paſture.

Graſſes cultivated, &c. The paſtures in general are
natural produce of the land, and conſiſt of white clo
&c. The ground to be laid down, as it is here term
is generally ſown with red and white clover, trefoil,
rye-graſs, and frequently with a mixture of all theſe ſe
They are for the moſt part ſown with a crop of barley.
Lynes (Lord Wentworth's ſteward) harrowed a piec
old ſward, which was very full of moſs and weeds, an
anſwered very well. He harrowed another piece,
manured it afterwards, which anſwered ſtill better.
laſt piece would ſcarcely maintain two ſheep *per* acre
ſummer through. The moſs and weeds by the harrow
were entirely eradicated.

Watering land. Some few meadows are watered, an
great quantity of land is capable of that improvement,
no country abounds more with rivulets and ſmall ſtrea
nor is there any where the land lies with ſuch a proper

fine deſcent, ſo as to render a very great quantity capable of that improvement, provided the different occupiers would agree to have floating drains carried in continuation over ſuch of their reſpective lands as would admit of it, for their mutual benefit. Water-mills are a very great hindrance to the extenſion and general adoption of this improvement. Very little of the land is watered on the ſide of the county towards Melton Mowbray. It is chiefly confined to the northern part, and is gaining ground very faſt. Mr. Wilkes, Mr. Bakewell, Mr. Paget, Mr. Aſtley, Mr. Moor, and a few others, water a great quantity of their land, and have derived great benefit from it. The method varies according to ſituation and circumſtances: Mr. Wilkes and Mr. Bakewell water about 200 acres each, in a very maſterly manner. The whole of Mr. Bakewell's is ſupplied by a canal which he has cut, a mile and a quarter in length, and is ſtill extending it, intending to carry it as far as poſſible through the eſtate. He has ſeveral patches which are left unwatered, to ſhew the improvement. The difference of verdure is aſtoniſhing; the pieces watered had more graſs on them, in the proportion of ten to one, than the parts unwatered, and were of a fine green, while the parts unwatered were of a ſickly yellow. Mr. Bakewell is a great advocate for watering, and thinks it one of the firſt improvements; the land adjoining Mr. Bakewell's is not watered, and is in the ſame ſtate that Mr. Bakewell's was formerly, both equally good and capable of the ſame improvement. The land is full of coarſe ſour graſs, with a great quantity of ruſhes; while Mr. Bakewell's is in the higheſt ſtate of cultivation, and not a ruſh can be ſeen. Mr. Bakewell never manures his watered meadows. He cuts the graſs all the year round, and carries it to the cattle in their ſtalls in winter, and in ſummer on to thoſe fields not capable of that improvement, by which means it goes much farther, and at the ſame time manures ground on which it is carried for the cattle. He waters the year round, cutting four times in the year. In very h weather the water is allowed to continue about forty-eig hours; in moderate, about four or five days; and in co about a fortnight. Mr. Bakewell is careful not to wat when it is likely to freeze on the graſs.

Grain cultivated. Oats, wheat, barley. Oats generall upon turf, ſeed about ſix buſhels to the acre. Wheat aft oats, the ſtubble having been firſt harrowed, as ſoon as th crop cleared, that the ſeed ſcattered might vegetate; then fe and deſtroyed by ſheep as much as poſſible before the ſow ing of the wheat. A ſprinkling of dung is uſually throw upon the ground, and ploughed in; frequently ſix or eigh quarters of lime *per* acre are ſpread, immediately after th ploughing, and harrowed in with the ſeed. One bag (o three buſhels) to the acre, which is generally ſoaked i brine, to prevent the ſmut, &c. The quantity of barle ſown upon turf, upon the beſt turnip land, is from thre to three and a half buſhels *per* acre, after turnips thre buſhels.

Average produce.		Buſhels.	
	Oats.	Wheat.	Barley
From the beſt management, - -	50	30	40
Second rate, - - - -	40	25	35
Third rate, - - - -	30	20	26

The ſide of the county towards Melton Mowbray is in general conducted in a bad ſlovenly manner. It is not uncommon to let the land lie uncultivated, after the crop of oats until the April following, and then to give it one ploughing, and ſow it with barley, or to plough it after the oat crop, and to ſow it with wheat, and then let it lie until the ſpring following, and take another crop of oats or barley; or at the beſt to give it a very indifferent fallow, and ſow it with turnips, the crop is conſequently ſeldom good.

Rotation of crops. Oats, wheat, turnips, barley, clover; but upon the light gravelly and loamy ſoils barley is more frequently the 1ſt. crop ſown early, and bruſh turnips after it, which are very ſerviceable for ſpring keep; 2d. turnips; 3d. barley and ſeeds. Oats upon the turf on this ſort of land are uſually followed in the ſame order. In this rotation, wheat, which is by no means an advantageous crop for this ſort of land, is thrown out, and the land, with very little trouble, kept in the beſt poſſible condition, both in heart, and from twitch, weeds, &c. which are ſure to over-run this kind of ſoil in every wheat crop. The above are the general rotations of crops; but in the practice of individuals they vary very conſiderably, and in no part of the country is there any regular ſyſtem of cropping.

TURNIPS, POTATOES, CABBAG CARROTS, &c.

Turnips are cultivated in moſt parts of the county; general ſown broadcaſt and handhoed. They are too of cultivated upon a ſtiff clay, conſequently cannot be eat with ſheep during the winter months to any advanta great quantities are annually loſt by being trampled i the dirt. In the practice of the beſt farmers they are off by ſheep, rearing calves, &c. where the land will per and ſome drawn off for the dairy, feeding beaſts, &c.

Potatoes are very little cultivated, except for the table, thoſe in general are of a very indifferent quality.

Cabbages are cultivated by a few individuals, for ſh dairy, &c. and are planted in rows from three to four aſunder, and eighteen to thirty inches from plant to pla hoed by the plough between the rows, and by hand in rows. They are the drum-head ſort, and often run u a great weight. Mr. Baker, of Burſtall, had a few y ſince two cabbages, one weighed ninety-two pounds, other ninety. He took great pains to bring them to weight, by giving them ſufficient room, &c. I was formed that cabbages are a very favourite food for t rams.

Carrots are very little cultivated. Mr. Bakewell cultivates a few for his horſes, &c. Mr. Baker uſed to cultivate them, but of late years has left them off, owing to the heavy expence attending them, by reaſon of his land running ſo much to weed. He is a great advocate for their culture upon land ſuitable. When Mr. Baker cultivated carrots, he uſed to cut the tops off the latter end of June, and make them into hay, which thought, I believe, is original. He informed me, that the tops of a good acre of carrots would produce *four tons* of excellent hay, (the trouble in making of which is little more than clover hay), and that all kind of cattle were very fond, and throve very faſt on it. I objected to cutting off the tops, as it might tend to diminiſh the weight of the root (I know it will with potatoes); but Mr. Baker was not of my opinion, as he always obſerved the tops to ſhoot out very luxuriant immediately after they were cut over. The tops were cut over with a ſcythe, and care taken not to injure the crown of the plants by mowing them off too cloſe. On mentioning this to a friend, who is curious in the cultivation of his garden, he is of opinion, that, inſtead of decreaſing the weight of the root, it will increaſe the weight, as he always cuts off the top of his parſnips, for the very purpoſe of increaſing the ſize of the root, which he always found to anſwer. He thinks the carrot and parſnip alike in point of growth.

The carrot-tops muſt be taken off the ground to be made into hay. Mr. Baker uſed to give his carrots to all kinds of cattle, particularly horſes, and found them very excellent for mares and foals. Mr. Baker preſerves his carrots in the following manner: he digs a trench about three feet wide, and eight or ten inches deep. The carrots being dug up, and their tops (which are given to cattle, &c.) cut off, they are placed as cloſe to each other

(perpendicular) as poſſible in the trench. When the tren
is full, they are covered over with ſtraw, and over the ſtra
the mould that comes out of the trench, by which mea
they are preſerved from the froſt, &c. By this method th
are perfectly good till May or June. He informed me th
his carrots had been viewed at different parts of the wint
by Lord Winchelſea, who found them equally as good a
juicy as when firſt taken up. If carrots are preſerved
ſand, Mr. Baker ſays, they will loſe their juices, and b
come tough and ſtringy; and, if preſerved in ſtraw, th
will generally rot. Care muſt be taken, when carrots a
wanted for uſe, to ſtop the hole of the trench cloſe fro
the weather.

Beans are ſometimes cultivated upon the ſtrong lands, b
not in any great quantities; they are ſown broadcaſt abo
five buſhels *per* acre, and produce, on an average, near
three quarters.

Vetches are cultivated, by the beſt farmers, for ſoili
horſes and cows, and the practice is gaining ground ve
faſt.

Cole is ſown by ſome few of the beſt farmers for ſheep.

FALLOWING. Land is generally prepared for turnips b
fallowing. There are alſo a few fallows in the open fiel
for wheat and barley.

MANURES. In the practice of the beſt farmers, *dung*
all kinds that can be procured is uſed. *Lime*, in conſide
able quantities, and compoſts of dung and lime are fr
quently uſed. But the chief manuring is upon turnip fa
lows; ſix to ten, or twelve cart-loads of farm-yard dun

p

per acre (the carts are drawn by three horſes, and I ſhould ſuppoſe will hold about forty buſhels) according to the ſtate of the land; and from ſix to fifteen quarters of lime *per* acre, eight perhaps are the medium; the dung generally ſpread in as rotten a ſtate as it can be got into, and turned into fallow; the lime in a quiet ſtate immediately after, and harrowed in with the ſeed.

Compoſts are made, in conſiderable quantities, from the ſcouring of ditches; ſoil gathered from ſides of roads; furrows drawn to carry off ſurface water upon the colder lands, and gathered up, &c. This is collected in the winter, turned over in the ſpring, and again in autumn; at this turning, farm-yard dung or lime, or both, are mixed with it. This is uſed as a top dreſſing for meadow or paſture land (excellent huſbandry). Few farm-yards are well adapted to the oeconomy of the dung-hill; on the contrary, they are moſtly paved with a dip for the drainage to run away, and there are but few inſtances where care is taken to convert it afterwards to any uſeful purpoſe.

Fold-yard dung is generally laid on their turnip fallows, and on the clovers.

In ſome parts of the county they depend entirely upon lime and dung, without paying the leaſt attention to compoſts, or any other manure whatever. If lime is fetched any time before it is wanted to be uſed (as is the caſe when the teams are at leiſure), it is thrown up in ridges, and thatched to preſerve it from the weather; one heap, I obſerved, had buſhes or thorns put round it to keep it from being diſturbed (I ſuppoſe) by cattle, &c.

Brecon lime is not in high eſtimation for the farmers uſe; they complain it is too ſtrong, and they are afraid to uſe it on account of its great ſtrength.

Tecknel lime they approve, becauſe they may lay
large quantity without fear of injuring the land; the Br
is ſixteen-pence *per* quarter, and the Tecknel ſome
dearer. Builders prefer the Bredon for their uſe. N
is two pieces of the Bredon taken from different parts o
rock; No. 2. is a piece of the Tecknel. I recomme
them to try the Bredon lime in compoſt with earth, &
I ſhould think by that method it would be found to an
and prove a much better and cheaper manure tha
Tecknel—lime being too ſtrong as a manure, is a pa
that I cannot ſolve.

Barrow lime is uſed for various purpoſes. A great q
tity is uſed for manure and building, but particularl
water-works, for which it is carried to all parts o
kingdom. In many inſtances it has been found to e
the hardneſs of ſtone. This ſtratum of lime-ſtone pro
many curious foſſils.

DUNG. In my rides, I obſerved many of the fa
ſpreading their dung out of the waggons, and was info
they could ſpread the dung more even by this method.

URINE. In a county where there is ſuch a quanti
cattle kept in the houſe to feed, &c. it is wonderful
have no reſervoirs to preſerve the urine; it is well k
that cattle evacuate much more by urine than by d
and it is allowed by every intelligent perſon, that
urine of cattle is one of the beſt manures, if properly
naged. I would wiſh to recommend to ſome of the le
men an attention to this, as I am certain they would
it anſwer much beyond the expence attending it.
Goodacre has juſt built a very capital ſet of ox-ſtalls;
the only thing wanting to make them complete, is a r

voir for the urine: I have no doubt but he will have one made, as he was pleaſed with the idea when I mentioned it to him.

MARL is very little uſed, as it is the general opinion that land, if once marled, will never turf itſelf again. After marling, they allow that the land will bear very good crops of corn; and, I ſhould ſuppoſe, it would bear good crops of artificial graſſes; but theſe are little attended to.

BONES. Mr. Lynes tried an experiment with bones ground fine, againſt dung, upon a piece of clover—the bones were evidently the beſt. Mr. Paget recommends, inſtead of being at the expence and trouble of grinding the bones, to mix them in a heap with lime, which will in a ſhort time reduce the bones to powder.

SOAP ASHES and COAL ASHES are ſometimes uſed for paſture land, and found to anſwer.

GYPSUM is found in great quanties in many parts of the county, and has been tried by ſeveral gentlemen for various crops; but, from the beſt information I could get, it is the general opinion that it will not anſwer. It was tried upon paſture, againſt other manures; and the perſon thought it anſwered better than the others, and laid his claim for the premium offered by the Leiceſter Agriculture Society on that head; but, the Society were of opinion, that it was not a proper trial, as the produce had not been fairly aſcertained by cutting the reſpective trial-pieces and weighing them; inſtead of which, the whole paſture was grazed in common. Mr. Weſton (ſecretary to the Society) has ſold ſeveral hundred at 2*s.* 6*d.* *per* buſhel. No. 3. is a ſample of the Gypſum.

IMPLE-

IMPLEMENTS.

Waggons. The moſt common are ſtrong and l bodied, being generally uſed in bringing coals and from ſome diſtance, and are rather preferred to the light harveſt-waggon. Some people, however, think are too heavy and clumſey. The length of the bo about fourteen feet without any interſection to receive wheels, conſequently they are very aukward to turn height of the fore-wheel is about four feet nine o inches. The price varies, from 30 to £40, accordi the width of the wheels. Hair-cloths are uſed for cov waggons, &c.

ll waggons
s £24.-
l wag. £34.

(x) **Carts.** The carts are made upon the ſame princi the waggons (large and heavy). The price is from £12. The carts made uſe of for carrying the rams are light, and made for the purpoſe.

Winnowing Machines, &c. are made by Mr. ironmonger, Leiceſter; and, by the few who have them, are highly commended. They are made nearl ſame as Mr. Winlaw's: the price is about nine gui I was credibly informed that they would winnow quarters of corn *per* day, with only four people to a the machine. (x)

ten a day may
l a good days work.

Ch

Chaff-Cutter. This inſtrument is likewiſe made from Mr. Winlaw's, and anſwers the purpoſe extremely well; but, I ſhould ſuppoſe, from the high price, it will never be brought into general uſe. Mr. Cort charges ten guineas. The Rev. Mr. Babington has one of Mr. Winlaw's, which coſt him about eighteen pounds, packing-caſe and carriage included. The Rev. Mr. Cooke attended the Agricultural Meeting at Leiceſter, and took orders for ſeveral of his patent chaff-cutters, which he has juſt invented, and which promiſe to anſwer every purpoſe. They will coſt much leſs, and are adapted to any ſtrength.

By a gentleman, who made the experiment, I was informed, that 112lb. of ſtraw would produce eighteen buſhels of chaff, and that 112lb. of hay would produce ſeventeen buſhels.

Spring-teeth rakes, ſold by Mr. Cort at 16s. each. Theſe rakes are in high repute; and it is the general opinion, that one perſon will do more with this rake than four with the common wood rake. They are uſed for both hay and corn. By the lower claſs of people they are called *hell-rakes*, on account of the great quantity of work they diſpatch in a ſhort time. Many have attempted to make theſe rakes; but they are far inferior to thoſe ſold by Mr. Cort. The teeth ſcrew in, and are faſtened with ſcrew-nuts.

Churn, with flyers in the inſide. This is a new invention, but has never been properly tried.

N. B. Mr Cort is a young man, juſt entered into buſineſs, and is very highly ſpoken of. I beg to recommend him to the notice of the gentlemen, &c. of the county, as I am certain he will be happy to pay every attention in his power, and will be found particularly uſeful in bringing forward any new implements in huſbandry, that may be uſeful to the county, and at a moderate price.

MILK SLATES, made by Mr. Hind of Swithland. is a new invention. They are made of large broad ſ hollowed out about three inches, with a hole in the bo to let off the milk; the price 2*s.* 4*d.* *per* foot (ſuperfic under three feet long; 2*s.* 6*d.* *per* foot when more three feet long—each foot holds about a gallon. keep the milk perfectly ſweet and cool; but great care be taken not to put boiling water in them, as it will them immediately. They are as yet very little uſed i county.

DRILLS. Mr. Cooke's drill is the only one uſed i county, and this only by a very few people; but it ap to be gaining ground. Thoſe who have paid proper a tion (one perſon, after drilling the ſeed, pays no farthe tention to the crop till it is fit to cut,) to the drill cul have a high opinion of it, as they have grown much b crops by the drill than they ever did before by the b caſt huſbandry; the diſtance is from nine to twelve i in the rows.

TURNIP-TRANSPLANTER. This is a ſmall imple for making full and regular crops of turnips (by fillin vacancies where they occur), and is ſo conſtructed, it ſhifts as much of the ſoil at leaſt with the plant, a be neceſſary to ſecure its future growth: the trouble an pence attending the proceſs, it is thought, will preve becoming general. This tranſplanter is made by Mr. ford of Hathern, at 7*s.* 6*d.* each.

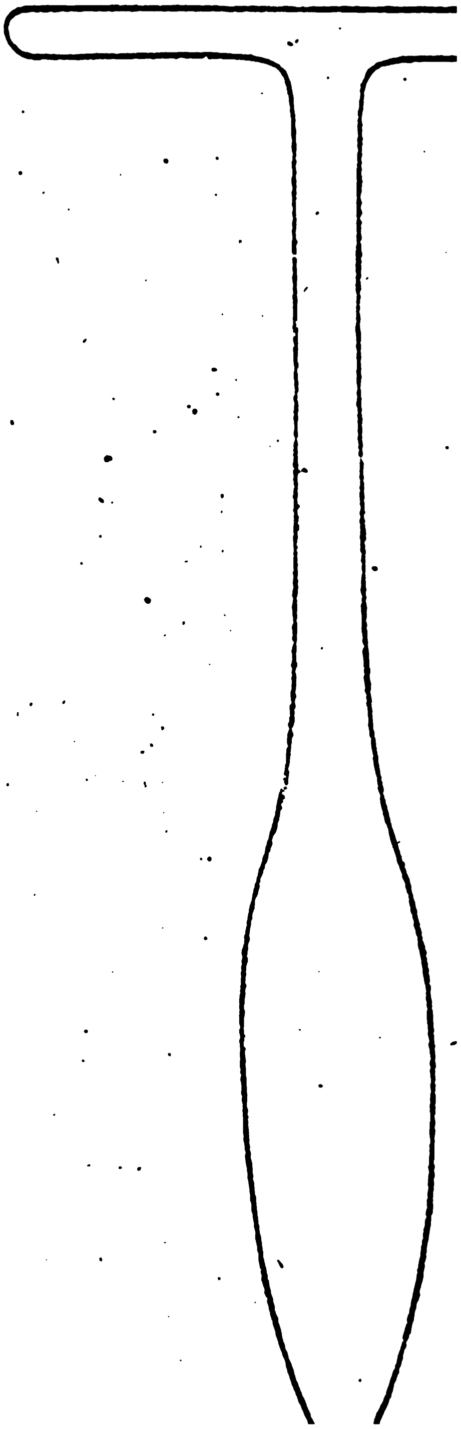
TURNING-MACHINE. This implement is a very ful invention for turning the ſtaves of waggon-rails, which it does with great eaſe and expedition; and, wh the piece is ſtraight or crooked, it will turn it perf

ro

ound ; it alters to any moderate diameter, nd is made by Handford for 15s.

IMPLEMENT for ſlaughtering cattle, c. This implement is thruſt into the inal marrow at the nape of the neck, nd is inſtantaneous death to the animal. The throat is cut immediately after the peration. Mr. Bakewell particularly reommends this inſtrument to the notice of he Board of Agriculture; in hopes, hrough their means the uſe of it will ecome general, and prevent a great deal f pain which the animal very frequently uffers in the common mode of ſlaughering.

The annexed figure is the exact ſize nd ſhape, made of ſteel; with the edges f the ſpear part (or blade) very ſharp.



SPIKE ROLLER. This implement is ſed by a few, and found to anſwer, eſecially in heavy land. The price runs 10 to £16. (according to the ſize and weight of iron).

HARROWS. Square harrows are in ſome arts of the county uſed with tyne, about ine inches aſunder, and two triangular arrows drawn together by the acute angle; ſo that their reſpective hypothenuſe orm the diagonal of a ſquare. I alſo met with a harrow, the tynes of which were ſharp, like a coulter, and ſcrewed in, that hey might be taken out to ſharpen.

STOCK.

SHEEP. There are different breeds of ſheep in the county the new Leiceſter, the old Leiceſter, and the Foreſt ſhee The Diſhley, or new Leiceſter, bears down every oth breed before it; and I have no doubt, but, in the cour of a very few years, this breed will be diſperſed throug every county in England, &c.

The leading idea is, to procure that breed which, on given quantity and quality of food, will pay the moſt; an thoſe people who have tried them are convinced, that th Diſhley breed will live where many other breeds woul ſtarve; and that, the more beautiful the form, the hardi the animal is of every kind. Nothing can ſhew the hig eſtimation this breed is held in, clearer than the hig prices they have fetched lately at different ſales. The fo lowing are ſome of the particulars of Mr. Paget's.

Ewes belonging to Thomas Paget, Eſq. ſold by auctio Nov. 16, 1793.

	Ewes.	Guineas each.	Guineas.	
Lot 6	5	62	310	Mr. Buckley.
38	5	52	260	Mr. Pelkington.
37	5	45	225	Ditto.
5	5	30	150	Mr. Breedon.
17	5	30	150	Mr. S. Stone.
7	5	29	145	Mr. Bennett.

Lo

	Ewes.	Guineas each.	Guineas.	
Lot 11	5	25	125	Mr. Bennett.
3	5	22	110	Mr. S. Stone.
9	5	22	110	Mr. Boyer.
2	5	20	100	Mr. Stubbins.
4	5	20	100	Mr. Tomelin.
14	5	20	100	Mr. Fryer.
15	5	20	100	Mr. Deverell.
18	5	20	100	Mr. Martin.
20	5	20	100	Lord Egremont.
16	5	18	19	Mr. Wirgfield.
40	5	17	85	Mr. Meland.
12	5	16	80	Mr. Powriſe.
23	5	16	80	Lord Egremont.
39	5	16	80	Lord Harborough.

By private contract before the ſale.

30 ewes, at 20 guineas each, 600 guineas, Mr. Simpſon.

N. B. Lots 37, 38, 39, and 40, were thaves.

It is to me wonderful, that 130 ewes ſhould fetch an average of twenty-five guineas each, and all of them the property of one man.

The following paragraph (which, in my opinion, elucidates the value of this beautiful ſpecies in a very high degree,) I took from the Leiceſter paper:

"To the Printer.

"In your paper was lately advertiſed to be ſold, by Mr. "Boot, on the 20th and 21ſt of September laſt, the ſtock "of Nathaniel Pearce, Eſq. the ſheep of the new Leiceſ- "terſhire ſort, and the neat cattle from the beſt ſort of the "long-horned breed.

" In an advertiſement of the ſtock of C. Cartwright, E
" alſo to be ſold by Mr. Boot, on the 7th inſtant, it is ſa
" the neat cattle are of the beſt ſort of the ſhort-hor
" breed, and the ſheep of the true Lincolnſhire ſort
" ſcended from rams bred by Charles Chaplain, Eſq. a
" Mr. Bartholomew.

" Produce of each ſale, with the difference.

	At Mr. Pearce's ſale.			Mr. Cartwright's.			Differenc	
	£.	s.	d.	£.	s.	d.	£.	s.
" Beſt ſcore of ewes,	166	19	0	27	0	0	139	19
" Ditto wethers,	50	11	6	29	0	0	21	11
" 1 bull and 4 cows,	331	5	6	38	15	0	292	10
" Bull-calf (10 days " old) out of one of " the cows, £42.								
" Three yearling " heifers,	63	0	0	8	8	0	54	12
	£611	16	0	103	3	0	508	13

Many people have an idea, that this breed is at
higheſt pitch, and that the prices will ſoon fall; but at p
ſent I do not think it likely, at leaſt while men flock f
diſtant counties, and give ſuch high prices, neither wo
theſe people come a ſecond and a third time, if they did
find their account in it. I heard a perſon, from a very diſt
county, offer thirty guineas apiece for ewes at Mr. Pag
ſale; and I heard, from very good authority, that one
the firſt breeders had refuſed a thouſand guineas for
ewes. From this the price of the breed does not appea
be falling.

In a converſation with one of the firſt breeders in reſp
to the wool of this breed, he ſaid, people were miſtaken
their ideas about it. He allowed that the Lincolnſhire ſh

gi

gives a greater fleece; but that a given quantity of land will maintain a greater number of the Diſhley than of the Lincoln, by which means there will be a greater quantity of wool upon a given ſpace of land. This gentleman was alſo certain, that a given ſpace of ground would maintain one third more of the Diſhley breed in number, and would likewiſe produce a greater weight of mutton than any other breed.

On viewing the hoſpitable manſion of Mr. Bakewell, I was highly gratified by viewing this ſtock of ſheep, &c. Every thing at Diſhley is conducted with the greateſt order and regularity, and, I may add, with every politeneſs and attention a ſtranger can wiſh for. The ſheep are ſhewn one by one in a place built for the purpoſe. They are brought in at one door; and, after you have ſatisfied your curioſity, they are returned back by another door, and then another is brought in; and ſoon I obſerved, they brought them regularly better and better, ſo that the beſt came laſt. On my aſking the reaſon of this, I was informed, if they had brought the laſt firſt, the great ſuperiority would have made the others much worſe than they really were, which would be a great injury to them. This too I found was the reaſon they never ſhew their rams after they are engaged, it being natural to human nature to covet that which it cannot poſſeſs. I by no means profeſs to be a judge of cattle; but I think there were ſome of Mr. Bakewell's ſheep far ſuperior to any I viewed in the county (or in any other county I ever ſaw in my life.)

On another part of the farm were various kinds of breeds mixed together, and among them were three ſheep, the produce of a Ryland ewe. One got by a Ryland ram, one by a Spaniſh, and the other by a Diſhley: The difference was very great; that by the Diſhley ram was far ſuperior to the others, and its ſhape ſhewed the advantage of this

croſs to a very great degree. There were alſo other bre
but they appeared very inferior compared with the Diſh
The South Down is, in my opinion, next to the Diſh
Mr. Bakewell has ſeveral ſheep of different kinds ſa
whole, for the inſpection of viſitors. They are hung
and the difference between the breeds when dead is, if
ſible, ſtill greater than when living. I was informed,
Mr. Bakewell's ſervants ſhewed one of his Diſhley ſa
ſheep at Mr. Fowler's ſale, and the company preſent
warded them very handſomely for the ſight of it. How
this is, I know not.

The difference of offal is certainly very great: the in
of the Diſhley is not larger than that of the lamb; and
bone is amazingly ſmall compared with the other bre
Mr. Bakewell has made ſeveral experiments to aſcer
the quantity of food eat by the different breeds, in pro
tion to their reſpective weights. Theſe experiments
Bakewell carried on for three years, and they all ſhe
the great ſuperiority of the Diſhley blood. Theſe kind
experiments are very intereſting, and I flattered myſelf
would have permitted me to have taken a copy of th
but I was diſappointed. (Mr. Bakewell offered to lend
ſome of his ſheep to make the ſame experiments, but
non-reſidence prevented my having that great pleaſure.)

Mr. Bakewell has alſo, among his curioſities, a ru
and ſurloin of a cow, more than twenty years old w
killed, which is wonderfully fat. It is now more than f
inches thick in fat, and would, without doubt, have b
conſiderably thicker, had ſhe been killed at an earlier a
He has alſo two pieces of bacon, one from a hog with v
large bone, and the other from one with very ſmall bo
The latter was eleven inches through to the bone, and
former not half ſo deep.

Th

There is a time fixed for viewing the different kinds of ſtock, which prevented me from ſeeing the horſes. The famous white bull is a noble animal (but I found there were many who preferred that ſold at Mr. Paget's ſale). In converſation with Mr. Bakewell reſpecting Mr. Paget's bull having had but few cows, I was of opinion that if Mr. Paget had fixed his price at five or ten guineas a cow, he would have found it anſwer better than fixing ſo high a price as twenty-five guineas; but Mr. Bakewell ſays, the only way to improve the breed of cattle is to keep up the price; for, if the price is low, people ſend any kind of cows, and if the produce fails, the bull is blamed; but, if the price is high, they are particular, and ſend none but the very beſt, which is the only method to improve the breed. The ſame argument, he ſays, holds good with all other kinds of cattle. After ſeeing the white bull, I ſaw the cows, heifers, &c. among which were ſome very beautiful, and of great value. It is the rule at Diſhley, not to ſhew ſtock of any ſort in the field. In courſe, thoſe that are to be ſeen are fetched on purpoſe. I have no doubt but Mr. Bakewell has very good reaſons for this rule; yet many gentlemen are of opinion, that the trouble it gives takes off in a great meaſure the pleaſure of viewing this beautiful ſtock. Mr. Bakewell is a great advocate for ſmall bone in all kinds of cattle, and in his opinion many ſmall beaſts are to be preferred to a few large, as the ſmall-boned always pay more on the ſame quantity of ground by feeding, &c. than the few large. To ſhew the difference of judgement in reſpect to the value of cattle, Mr. Bakewell informed me, that ſome years ſince he uſed to attend Loughborough Tup-market, where he had a ram which he let for twenty-five guineas. Soon after the agreement, another farmer wanted to purchaſe this ram, and Mr. Bakewell (in joke) aſked him twenty-five ſhillings for it. The farmer offered

eighteen ; and at laſt they parted for two ſhillings. I
ſelf ſaw a heifer ſold at Mr. Pearce's ſale, near Northa
ton, for eighty guineas ; and a few days after, as ſhe
driven through Leiceſter, a party of farmers ſtanding
gether valued her at about eight pounds. I was like
informed, that Mr. Bakewell had let a bull to a gentle
for fifty guineas for the ſeaſon. The gentleman dyin
the interim, and the executors not knowing any thin
this tranſaction, ſold the bull by auction with the reſ
the cattle. When the ſeaſon was over, Mr. Bakewell
for his bull ; and, after inveſtigating the matter, fou
to his great ſurprize, that the bull had been ſold t
butcher for about eight pounds, who had killed it, and
it for 2½*d. per* pound. Mr. Bakewell in courſe applied
the executors for the value, which was fifty guineas
the ſeaſon (the ſtipulated agreement) and 200 guineas
the bull. The executors refuſed payment, thinki
" that, as the bull was ſold by public auction befor
" great number of farmers, and many of them though
" be men of judgement, for only eight pounds, it was
" impoſition." Mr. Bakewell was therefore obliged
bring an action for the amount ; and people appearing
witneſſes on the trial who were acquainted with this bre
and making oath that Mr. Bakewell had not over-val
his bull, a verdict was given in favour of Mr. Bakewel
the full amount, with coſts of ſuit

The perſon that gave me this hiſtory diſliked the lo
horned breed ſo much, that he would not accept of
Paget's bull (which was of the ſame breed, though it
for 400 guineas) if he might have him for nothing.

I am ſorry to ſay Mr. Bakewell's health was very in
ferent, which prevented my converſing with him ſo mu
as I could have wiſhed ; but I ſhall always think of
viſit to Diſhley with pleaſure.

Lord Harborough has been at a great expence to improve the breed of cattle in general, for the benefit of his tenants. His lordſhip gave £157. for a bull and £89. for a cow, beſides hiring rams at a great price from the firſt breeders. I was informed that his lordſhip for many years uſed to give conſiderable prizes to his tenants for the beſt calf, &c. &c. but, finding they had the imprudence to attempt an impoſition, his lordſhip has left it off. His lordſhip told me, "That he had given a commiſſion to offer for Mr. Paget's "famous bull, and with no other view than the good of "his tenants." I heard his ſteward offer fifty guineas apiece for ewes at Mr. Paget's ſale. He bought a heifer at ſeventy guineas, which was, no doubt, for the laudable purpoſe of improving the ſtock of his lordſhip's tenants.

On my viſit to Mr. Burgeſs, of Huggleſcote, I ſaw a fat wether of the Diſhley blood. This wether was killed on the ſecond of January, at Walgrave in Northamptonſhire; and Mr. Burgeſs was ſo kind as to ſend me a haunch of it into Devon, with the particulars of the weight of the whole ſheep, as under,

	lb.
The carcaſe, - -	144 or 36lb. *per* quarter.
Blood, - -	5
Head, - -	4½
Pluck, - -	4½
Gutts large and ſmall,	1¼
Paunch, - -	2½
Rough fat, - -	16½ and the ſkin 18lb.

The haunch weighed 24lb. which I ſent to my butcher in Kingſbridge to be hung up (and a ticket faſtened to it with the above particulars) for the inſpection of the farmers (on a market-day) in this part of the world. It was very much admired by every perſon; and, I am certain, the ſhewing of it has done more real ſervice to this excellent breed th my talking to them for ſeven years would have done. S veral gentlemen were of opinion that it was the beſt-flavour mutton they had ever eaten. The bone of the haun weighed only 13¾oz. My butcher declared it had not much offal as one he killed the ſame day, which was more than twelve pounds *per* quarter. I was informed Leiceſterſhire, that it is not an uncommon thing to ſalt dov this mutton, and that it was a very good ſubſtitute f bacon.

Wool. The fleeces of the *wedders* (wethers) run abo three or four to the tod (of 28lb.), the ewes rather more the tod, and are of a good quality.

Lambs are weaned from the middle of July to the begi ning of Auguſt, and put upon clover, lattermath, or oth freſh keep, until about November, when they are (or ſhou be) put to turnips, after having taken to eat them th uſually follow the feeding ſheep to eat up the hulls. So few give their wethers turnips and cabbages in winter.

Rams. The ram lambs have every indulgence from t time they are weaned till the time of ſhearing (the beginni of June) to puſh them forward as much as poſſible, as it the common practice to let them out to hire the firſt ſeaſo Theſe are called ſharhogs.

When Mr. Bakewell lets his rams, he never aſks a pri but leaves the hirer to offer what he thinks proper. If M Bakewell approves of the offer, he accepts it; if not, rejects it.

A Tup Society has been formed for ſome years in t county (ſome of the members reſide in the adjoining co ties) by ſeveral of the firſt breeders. They have rules a regulatio regulations among themſelves, which are not much approved of by the generality of the other breeders. I underſtood thoſe rules were a *ſecret*, therefore I made no enquiries concerning them.

The prices for rams by the ſeaſon (I believe they are very ſeldom ſold) are often very high; but how much is given, I will not take upon me to ſay. Many hundreds, I believe, are frequently given, and the quantity of ewes ſtipulated (about eighty is the general quantity) by agreement. Theſe very large ſums are generally given by men who breed rams to let again. The rams are generally ſent out about the latter end of September, in light carts made for the purpoſe. They travel from twenty to thirty miles a day, and are ſent to a great diſtance. Inſtead of turning the ram among the ewes, as is common in other counties, he is kept with two or three ewes, and the others brought to him one by one; and he is only ſuffered to ſerve them once each, by which means he is enabled to ſerve a much greater number.

Breeding flocks. The breeding flocks of ram breeders run from 100 to 200; very few more. After the lambs are weaned, the ewes are kept moderately till winter, when they have turnips, &c. It is ſaid that this breed lamb with leſs difficulty than other breeds, but that they are bad nurſes, being often in want of milk. The ewe lambs are generally kept from the ram the firſt autumn. The wethers (or wether hogs) are not ſheared the firſt year.

Old Leicester Breed. On Melton Mowbray ſide of the county, the ſheep are moſtly of the old Leiceſter breed; but, by buying young rams of the new Leiceſter ſort, I am informed, it is become much finer than it was for-

In converſation with one of the advocates for th Leiceſter ſort, he allowed that a daſh of the blood o new Leiceſter was a great improvement to them; and they are to be fatted as ſhar-hogs, the new Leiceſter dently fatten quickeſt; but, if kept to two ſhear, th breed goes larger (this I much doubt), and their fleec of more value. There are very few of the breeders o old Leiceſter but admire the Diſhley; and I have no d but in a very few years there will be no other breed i county.

FOREST SHEEP. Theſe are a very poor ſort, ſome like the breed we have upon the moors in Devon.

BULLS. Many fine bulls, of the long-horned bree reared in this county, which are often let by the ſe and ſome of them at high prices. They are let o April, and generally returned in Auguſt. They are fered to leap while yearlings; and, if approved of, are as long as they will do buſineſs.

HEIFERS. The age of heifers, when put to the depends upon fancy. Some let them take the bull a years old; others at three. All the two years old three years old heifers, at Mr. Paget's ſale, had been to bull.

People in this county think that the beſt of the l horned breed are really the beſt, as they will pay moſ a given quantity of food.

The following are ſome of the particulars of Mr. get's ſale, which will ſhew the high eſtimation this b is held in.

Firſt day's ſale, November 14, 1793.

Lot		Guineas.
Lot 8,	Short Tail, by Shakeſpear, bought at Mr. Fowler's	38
9,	Eyebright, by a Bull bred by Mr. Varnam	51
14,	Strawberry, by a Diſhley bull	31
16,	Brindled Eyebright	33
26,	Penn	35
29,	Young Dandy	30
30,	Brindled-Finch-Tidy	29
	Bulls and bull-calves.	
34,	Shakeſpear (bred by the late Mr. Fowler), by Shakeſpear, off Young Nell. Whoever buys this lot, the ſeller makes it a condition that he ſhall have the privilege of having two cows bulled by him yearly	400
35,	Bull-calf, by Lot 34	23
37,	A ditto, by ditto	31
39,	A ditto, by ditto	31

Second Day's Sale.

Lot		
Lot 45,	One three years old heifer	70
47,	One ditto	32
48,	One ditto	35
52,	One ditto	35
55,	One two years old heifer	25
57,	One ditto	60
58,	One ditto	84
60,	One ditto	29
61,	One ditto	25
64,	One ditto	27

The whole of the foregoing heifers are by lot 34; a together with the cows, have been bulled by him, exc lot 52, which has been bulled by a ſon of Garrick, lot 8.

Grazing. The graziers of this county are not in neral particular in reſpect to the breed. Fifeſhire Sc Shropſhires, Iriſh, Welſh, &c. in ſhort, any thing will pay. I found ſome few advocates for the Devonſ reds. Mr. Lynes is trying an experiment between a vonſhire and a long-horned cow. When I ſaw t Mr. Lynes thought the latter improved conſiderably f than the Devon.

The graziers handle the lean beaſts as well as th ones, and ſay the hip bone ſhould be covered with ſo thing under the ſkin that feels ſoft and mellow, and wiſe along the back and upon the ribs with a good fl if their hides are tight and hard, they reject them as promiſing. The grazing ſtock is in general confine one piece of land, and is ſeldom ſhifted as in moſt c counties, and they are generally intermixed with ſ according to the fancy of the grazier.

I obſerved pens in moſt of the grazing grounds, an general one ſerved for two pieces or more, by being p between them.

Calves are reared by hand, or two to a cow, unt to wean, and wintered upon turnips and hay.

Stallions. Some are bred by farmers, who draw in their teams, and cover with them in the ſeaſon. C breeders let them for the ſeaſon.

Mares are moſtly kept by farmers, who work the their teams until near foaling, and ſome moderatel

terw

terwards; ſhutting up the foals while the mares are working.

FOALS are weaned about the middle of November, and run in and out as they pleaſe; they have uſually a ſew oats or bran with their hay.

SWINE. Richard Aſtley, Eſq. has a very fine ſort, which he ſends to different parts of England. The boars ſerve ſows at half a guinea each; and Mr. Bakewell, in order to make people particular in ſending good ſows, wiſhes Mr. Aſtley to increaſe the price to a guinea; the produce Mr. Aſtley ſells (for breeding) at five guineas each, weaning old and barrow pigs at one guinea. They are very broad over the back, with very little offal, and have a great propenſity to fatten; the boar is thought to be very much like the wild boar. ×

Mr. Biſhop, of the Three Crowns Inn, Leiceſter, has a very handſome ſow; the produce of which he ſells at two guineas each, weaning old.

Mr. Baker is trying an experiment with ten hogs. He gives them turnips, with the tops and roots boiled together. I ſaw them when they had been up near a month, and Mr. Baker ſaid they had thriven much better than he expected; indeed, they did look very well!

DISORDERS OF CATTLE. The diſorders of cattle are not ſo well attended to as in my opinion they ought to be. Scarce any thing is done for ſheep, and but little for beaſts; and even that little not very rationally applied. The ſheep-rot has been a general complaint all over the county this laſt ſeaſon, and many thouſands have died. I obſerved two advertiſements in the Leiceſter papers, from different people, offering to diſcover a ſecret to cure the rot, by ſubſcription, at one guinea each; but have not found an perſon who has the leaſt opinion of theſe ſecrets: indee it is generally thought there is no remedy. I was informe by one perſon, that he had found horſe-beans a remedy i the very early ſtage of the diſorder.

When I called upon Mr. Friſby, of Waltham, he wa waſhing his ſheep in a particular kind of waſh, which, h informed me, was a moſt excellent preventative againſt number of diſorders, and what he had derived great benef from. I was in hopes he would have favoured me wit this valuable receipt, for the benefit of ſociety; but I wa ſo unfortunate as not to prevail upon him at that time, a Mr. Friſby had not made up his mind about letting m have it; but I hope he will have the goodneſs to inſert i in the broad margin, left for ſuch purpoſes, when thi ſurvey ſhall have been printed; and, I am certain, if it i that excellent preventative Mr. Friſby informed me it wa there is not a farmer but will think himſelf obliged to hi for making it known.

NEAT CATTLE are ſubject to ſtale blood. The metho of cure is to let blood as ſoon as perceived, and give 12 o 16 oz. of glauber ſalts; twenty-four hours after, give 4 oz of bole armoniac. This repeat the day following, if thei urine is not changed, ſtrictly obſerving to keep the bod open by mild purgatives and opening clyſters.

LIS

LIST OF FAIRS FOR CATTLE, &c.

Ashby-de-la-Zouch, Eaſter Tueſday, Whit Tueſday, Auguſt 24, September 24, and October 18.

Belton. Monday after Trinity Week.

Hallaton, Holy Tueſday, May 23, and June 13.

Hinckley, Auguſt 26, for cattle and cheeſe.

Leicester, May 12, July 5, October 10, and December 8, for ditto.

Loughborough, March 28, April 25, Holy Thurſday, Auguſt 24, November 13.

Lutterworth, April 2, and September 16.

Market-Bosworth, May 8, and July 10.

Market-Harborough, April 29 and October 19. This laſt fair continues ten days (great number of foals).

Melton-Mowbray. Firſt Tueſday after January 17, Whit-Tueſday, and Auguſt 21.

Waltham, September 19.

Whether Oxen or Horſes are uſed. Horſes are chiefly uſed three, four, five, or ſix, to a plough, all in length—the expence of keeping not much attended to; they are generally kept in the ſtable in winter, and ſuffered to graze abroad in ſummer. In the winter they make uſe of a great deal of ~~oat-meal~~ (ſtraw and hay, and ſometimes unthraſhed oats): ſome of the more enlightened farmers ſoil them in the ſtable with vetches, clover, &c. in the ſummer. Great numbers of mares are kept for breeding, all of the large

black kind; the produce is ſold off when ſoals or colt
except what are wanted to fill up vacancies in the team
Some few oxen are uſed in harneſs by the leading me
and are found to anſwer for all farm-work; they are
tractable as horſes, going one, two, three, or more,
cars, carts, &c.

At Hinckley I met with a Mr. Norton (a Catholi
prieſt), who has paid great attention to Agriculture, an
is very much reſpected by the firſt people in the farmin
line. In 1777 he reſided in France; at which time
wrote an eſſay upon the great utility of oxen, in preferen
to horſes, for the farmers uſe; for which a very handſo
gold medal was adjudged him, and likewiſe a large ſilv
medal for ſome other eſſay on agriculture. He calculat
that there are, upon an average, in this county, 150 horſ
(reckoning every kind) kept in each pariſh, and that t
keep *per annum, per* horſe, is from 12 to £15.—150 horſ
in each pariſh, and 200 pariſhes, amounts to 30,0
horſes; value the keep at £12. *per* horſe, it is £360,00
but if valued at £15. *per* horſe, which, I believe, (con
dering how very expenſively they are kept), is neareſt t
truth, it amounts to the enormous ſum of £450,000. *p*
annum.

I endeavoured to perſuade Mr. Norton to tranſlate
eſſay, and adapt it to the uſe of this country, for the b
nefit of ſociety; and, I am happy to find, by a letter I
ceived from him ſince, that he intends taking my advi
The following is an extract from his letter: "The e
" pence of keeping a horſe *per* year, is from 12 to £1
" Oxen, though very little uſed in this county, are ve
" capable of performing all the different ſorts of work
" agriculture; two oxen may be kept at leſs expence tha
" one horſe. I propoſe publiſhing a treatiſe on the com
" parative uſe of oxen and horſes for the farmer's uſe,

" whi

" which I ſhall treat of the nature of each ſpecies of thoſe " animals in general; of the reſpective quality and value " of their food; alſo the nature and quantity of their " dung, for the improvement of land; of their reſpective " agility, ſtrength, and capacity to labour; of the reſpec-" tive management or treatment each ſpecies ought to " have; of the price or value of each, when come to per-" fection: of the advantage it would be to the proprietor " in particular, to make uſe of oxen for the cultivation of " land (at leaſt to a certain degree), as well as the benefit " it would be to the nation in general. I propoſe to pub-" liſh it by ſubſcription, at 3*s.* each, as ſoon as I have a " ſufficient number of ſubſcribers to pay the expences."

It appears to me that this will be a work of great utility; and, I have no doubt, but the Board of Agriculture will do every thing in their power to aſſiſt in bringing it forward; and, I hope * Mr. Norton will experience the ſame kind attention to his publication from my brother farmers, as I am happy to ſay I have received from them.

SEED TIME AND HARVEST. Barley and oats are ſown from the beginning of February to the latter end of April; wheat from the middle of September to the latter end of October; hay-harveſt begins a little before Midſummer, and continues a month or ſix weeks; corn-harveſt begins about the ſecond week in Auguſt, and continues till October.

DAIRY, &c. Long-horned cows are chiefly uſed in the dairy, and calve from Candlemas to old Lady-day. Heifers are ſeldom all in before the latter end of April or beginning of May. No great attention is paid by the generality

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* Mr. Monk would with pleaſure receive ſubſcriptions for Mr. Norton in the Weſtern counties, from thoſe Gentlemen, &c. who are willing to ſupport this laudable undertaking.

of farmers to the breed, but there are ſome rather more
tentive at preſent to a *bit of blood* than formerly. Quant
of milk is the chief object, united with a hardy conſti
tion. Prices vary ſo much, on account of age, form, co
dition, uſe for the pail, times, and ſeaſons, that there
no giving a clear anſwer. I ſhould think from 10 to £1
but if *blood* is wanted, from 20 to £200. (a cow, cal
Waſhington's mother, in the poſſeſſion of Richard Aſtl
Eſq. of Oddeſton-hall, coſt £194. at Mr. Fowler's ſale
Oxfordſhire). Dairies run from twelve to twenty-fo
cows, ſeldom more. Make a great deal of two-meal chee
which ſells from 42 to 45*s.* the long hundred (112 lb
Moſt of them make whey-butter, which ſells for 9*d.*
pound, when other butter ſells from 10*d.* to 11*d.*; eighte
cows will make about 16lb. (17 oz.) of whey-butter
week. A cow requires about 2½ acres of good land
keep her the year round, and they reckon the expen
from 6 to £7. They are kept out as much as poſſible, a
fothered with hay, &c. With twelve cows one cheeſe
day is made (and in ſummer two) of ſix to the hundr
weight. A good cow will produce about 9 or £10.
annum. It is the opinion of ſome, that three milch-co
will eat as much as four fatting. Farmers generally bre
their own cows.

STILTON CHEESE is made in moſt of the villages rou
Melton Mowbray; but I found it impoſſible to get at t
ſecret of making it from the dairy people; and, from t
converſation I had with one of the firſt managers, I ſhou
ſuppoſe two cheeſes were never made alike, as it depen
upon ſoil, herbage, ſeaſons, heat, cold, wet, dry, &c. &
There is no doubt but thoſe cheeſes require a great deal
care and attention, owing, I ſhould ſuppoſe, to the
richneſs and thickneſs. They run from eight to ſixtee

or eighteen pounds, very ſeldom larger, and are ſold at 1*s*. *per* pound (moſt of the inns in the county retail them, the price thirteen and fourteen pence *per* pound). I was informed by the maker, that they were never better for the table than at a year old, but I believe they are ſeldom cut ſo ſoon. The *beſt* of the other ſort of cheeſe, made in the county, is, in my opinion, better than the generality of the Stilton, as it is but ſeldom you meet with a real good one.

In reſpect to the *grand ſecret* of making Stilton cheeſe, I ſhould have left the county without acquiring the proceſs, if it had not been for the politeneſs and attention of Major Cheſelden, of Somerby, who, upon my acquainting him with my diſappointment, kindly undertook to procure it for me from one of his tenants, who was among the firſt for making it. The following is the receipt.

" Take the night's cream, and put it to the morning's " new milk, with the rennet; when the curd is come, " it is not to be broke, as is done with other cheeſes; but " take it out with a ſoil-diſh altogether, and place it in a " ſieve to drain gradually; and, as it drains, keep gradu- " ally preſſing it till it becomes firm and dry; then " place it in a wooden hoop; afterwards to be kept dry " on boards, turned frequently, with cloth binders round " it, which are to be tightened as occaſion requires.

" N. B. The dairy-maid muſt not be diſheartened if " ſhe does not ſucceed perfectly in her firſt attempt."

In the dairies which I viſited, the cheeſes, after being taken out of the wooden hoop, were bound tight round with a cloth, which cloth was changed every day until the cheeſe became firm enough to ſupport itſelf; after the cloth was taken off, they were rubbed every day all over, for two or three months, with a bruſh; and, if the weather

is damp or moiſt, twice a day (and, even before the c
was taken off, the top and bottom was well rubbed e
day).

STUBBLES. All through this county the ſtubbles
cut for covering corn-ſtacks and hovels—litter for f
yards, and other uſeful purpoſes.

FENCES. White-thorn fences in general through
county, and in moſt parts are kept tolerably neat; the
cut once in about eight or ten years, if grown high.
fences are planted with two rows of plants, at about t
twelve inches apart; and near the ſame diſtance from
brink of the hedge or bank, on the top of which the
planted. Two rows of poſts and rails are the com
guard againſt cattle, &c. They are planted both in
Spring and Autumn. The ditch in general is very na
and ſhallow. Lord Wentworth's hedges are partic
good and neat; the tenants are made to trim theirs
year next the road, which is much to be commend
it not only gives them a neat garden-like appearance
makes them grow ſo thick at bottom as to be im
trable, and the roads are much cleaner by it, and of c
kept in order at a leſs expence. They are cut with a
ſtrument like a reap-hook, with a long handle, with w
a man will do a great quantity in a day. It is to be w
that other gentlemen would pay the like attention to
hedges, and inſiſt upon their tenants following th
ample; but I ſhould recommend, that the hedges al
the eſtate ſhould be cut in the ſame manner, for if i
anſwer in one place it certainly will in another. T
are ſome fences near Loughborough kept in beautif
der by this method, in which you will ſcarcely find a
that a dog can get through.

Mr. Bakewell's fences are in great order. He has different ſmall plantations of the Dutch willow in ſevera parts of the eſtate, one of which he cuts down annually at ſeven years growth; they run very long, and ſome of them very large, and are ſplit and made uſe of for poſts, gates, rails, &c. for which they are very excellent. Mr. Bakewell uſes no other kind of wood for thoſe purpoſes; and ſeveral people, I obſerved, are following his ornamental and uſeful method.

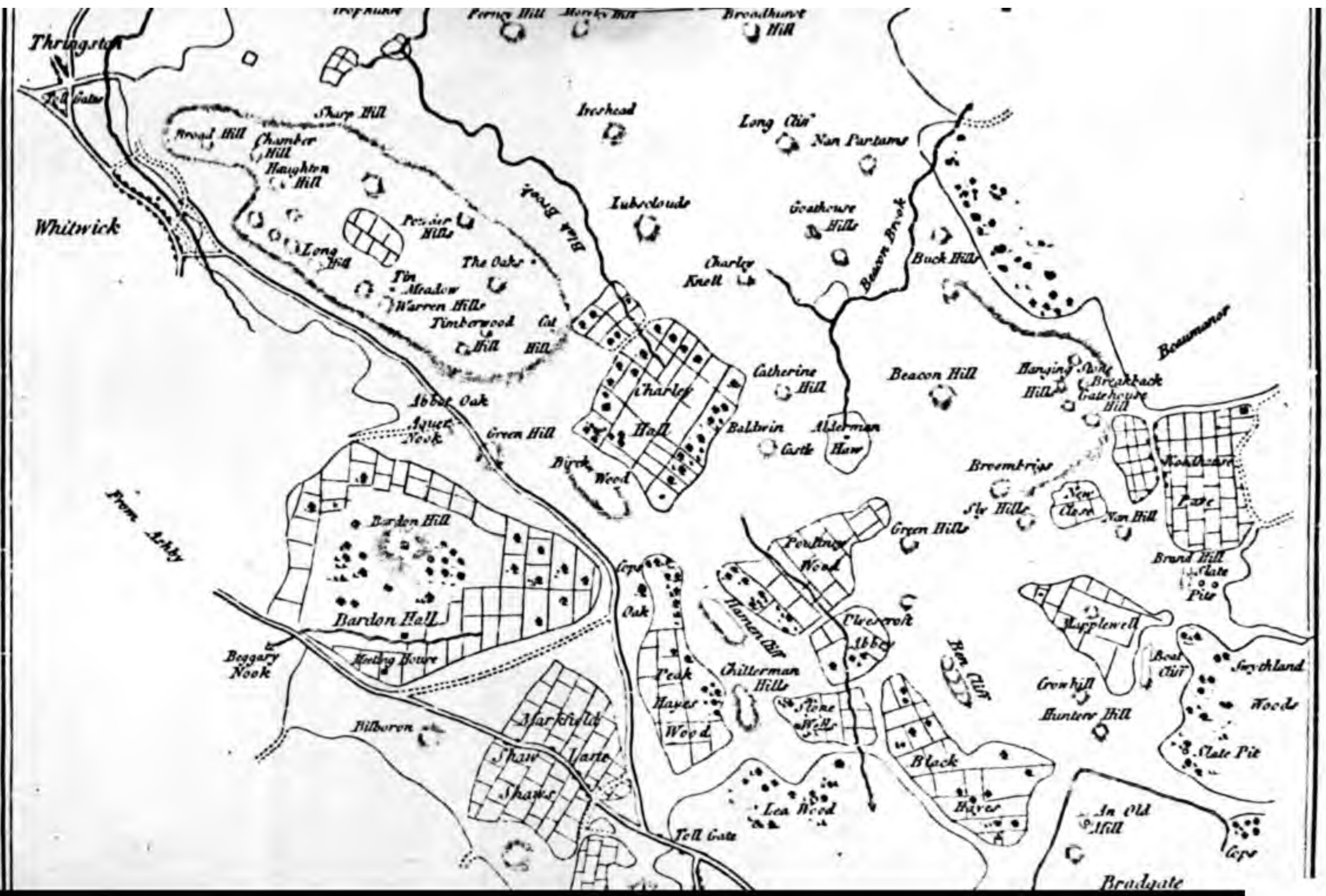
Inclosures. There are very few open fields in the county; and thoſe few, in all probability, will be incloſed in the courſe of a very few years. It is the opinion of one of the firſt men in the county, that incloſing the open fields has advanced the rents all through the county upon an average as from eight to twenty. In many inſtances it has been very great. Queniborough, which is now incloſing, has never netted more than 2*s.* 6*d.* *per* acre; and I heard the above gentleman ſay, he would with great pleaſure give, for ſeveral hundred acres of it, 25*s.* *per* acre, and be at the expence of incloſing, provided the proprietors would grant him a leaſe of twenty-one years. Tenants are partial to the incloſures, becauſe they are tithe-free (in all the new incloſures they throw a certain quantity of land in lieu of tithes), and they can cultivate their eſtates without fear of a drawback on that head; and another advantage is their lying ſo very compact.

The ſize of the new incloſures depends a great deal upon fancy, and the ſize of the farms. They run from five to forty acres, but in general are from ſeven to ten or twelve acres. In the old incloſures they are of all ſizes, from the half-acre homeſtead, up to one hundred acres. It is the opinion of the beſt farmers, that from eight to twelve acres is the beſt ſize, and the moſt convenient. Mr. Bake-

well is certain, that fifty acres of paſture ground divi
into five incloſures will go as far in grazing cattle as ſ
acres all in one piece; this was the opinion likewiſe of
veral capital graziers I converſed with on the ſubject

WASTE LANDS amount nearly to 20,000 acres,
the whole capable of conſiderable improvement; wh
in their preſent ſtate, are of very little value, being de
tured with a bad ſort of ſheep and ſome young cattle,
reſtrained as to quantity.

CHARNWOOD FOREST contains about 15 or 16,
acres; three-fourths of which might be made very uſ
good land, and, if incloſed, would make ſome excel
farms. The moſt improveable part is towards Lough
rough, where there is a large tract of very excellent l
much of it worth a pound an acre. It is the opinion
thoſe who are well acquainted with every part of it,
there is not a ſingle acre but what is capable of impr
ment. If the hills were planted, and the other parts
cloſed, it would be a wonderful ornament to the cou
Some people are of opinion, that planting the hills wo
not anſwer, as it would be impoſſible for the plantati
to thrive, the hills being ſo very bare of ſoil, and ful
rocks; but others, whoſe judgement ranks very high,
of a contrary opinion, and are certain they would th
very well, and not only be a great ornament, but of
great uſe in a country ſo very thin of timber. The wo
near Beaumanor, on the edge of the foreſt, thrive
well, which are upon a very thin ſoil, and rocky like
Charnwood hills. The chief proprietors are, the Ea
Stamford, Earl of Moira, William Herrick, Eſq. of B
manor, and a few others, who, I was informed (by
of the proprietors), wiſhed much to have it encloſed.


Thringstone
Toll Gate
Whitwick
Ferney Hill
Morley Hill
Broadhurst Hill
Sharp Hill
Broad Hill
Chamber Hill
Haughton Hill
Long Hill
Pocolier Hills
The Oaks
Tin Meadow
Warren Hills
Timberwood Hill
Cat Hill
Blak Brook
Ireshead
Lubcloude
Long Clif
Nan Partams
Goathouse Hills
Charley Knoll
Beacon Brook
Buck Hills
Beaumanor
Catherine Hill
Beacon Hill
Hanging Stone Hills
Breakback
Gatehouse Hill
Charley Hall
Balbrin Castle
Alderman Haw
Abbot Oak
Aquet Nook
Green Hill
Birch Wood
Broombriggs
New Close
Sly Hills
Nan Hill
Woodhouse Park
Green Hills
Brand Hill
Slate Pits
From Ashby
Barden Hill
Bardon Hall
Meeting House
Beggary Nook
Cope Oak
Poultney Wood
Hamon Clif
Ulverscroft Abbey
Ben Clif
Chitterman Hills
Peak Hayes Wood
Stone Wells
Swipplewell
Bow Clif
Crowhill
Hunters Hill
Swythland
Woods
Slate Pit
Bilboren
Markfield Waste
Shaw
Shaws
Toll Gate
Lea Wood
Black Hayes
An Old Mill
Cops
Bradgate

has long been in agitation, and I ſhould hope they will ſoon ſet about this great and uſeful work, as it certainly muſt be of great advantage to them (in particular), and the publick in general. There is a canal cutting through part of it, which will be exceedingly convenient for the carriage of lime, &c,

Mr. Bakewell is of opinion, that the Foreſt, in its preſent ſtate, is actually a loſs to thoſe who have the privilege of turning their ſtock upon it; for, if one man who has this right turns his cow upon the foreſt in the ſpring, and another man at the ſame time gives a farmer eighteen pence a week for the keep of his cow in an incloſure, and they are both driven to market (both of the ſame value when turned out) at Michaelmas, the difference of price will more than repay the expence of the keep; and that the difference in ſheep will be ſtill greater. A number of little encroachments have been made within theſe few years on the foreſt by incloſing ſmall pieces; but, if the whole ſhould ever be incloſed, they will be properly enquired into.

I was ſo fortunate as to meet with a map of the Foreſt in the poſſeſſion of the Rev. Mr. Prior, who, with great kindneſs (being a well-wiſher to the cauſe), permitted me to take a copy of it. It is the only one (I believe) ever taken, except a very old one in the poſſeſſion of William Herrick, Eſq.

THE WOULDS contain about 4000 acres of a cold dark-coloured clayey ſoil, capable of great improvement, if they were incloſed and properly ſoughed (drained). The principal proprietor is the Earl of Moira, who, I underſtand, is about to incloſe it very ſoon.

There is very little waſte land, beſides the above, but what is in very ſmall pieces, ſome of which certainly

might

might be very much improved by draining, &c. but muſt depend upon the ſpirit of the individuals who ar proprietors.

Some of the roads, being thrown out upon the inclo thirty feet wider than is neceſſary, may almoſt be de waſte. It is true the graſs is eat up by ſheep, &c. tu on for that purpoſe; but the value of it in its preſent is very little to what it would be if taken into the adj ing fields, and cultivated in a proper manner. It is, ſides, very inconvenient, and very unlike a good far to have his cattle running about the high roads. M ſcore acres (taking the country through) are walled o to this ſlovenly practice.

Price of Labour. Wages for a ſervant man 6 to £12.; a lad from 3 to £5.; dairy-maids from £3. to £5. and ſome few more; labourers from 1*s.* to 1*s.* *per* day, and their board in harveſt, with the carriage load of coals worth from 14 to 21*s.*; the reſt of the from 1*s.* to 1*s.* 6*d.* and beer. In ſome parts of the co the price of labour varies very much, owing to the number of hands employed in cutting the canals. Wo in harveſt earn eight-pence a day, and their board; from ſix to ſix in the ſummer, and in the winter fro ven till five—two hours a day allowed for meals.

A great deal of labour is done by the piece, or, as call it, by the great; by the piece, a good labourer ex to earn in harveſt a guinea *per* week, and in winter reaping from 7 to 10*s.* an acre; mowing graſs or b from 2*s.* to 2*s.* 6*d.* *per* acre; thraſhing wheat 1*s.* *per* (3 ſtrike) and beer; barley from 16*d.* to 2*s.* and beer; 10*d.* to 1*s.* and beer.

Ser

Servants are moſtly hired from Michaelmas to Michaelmas, at public ſtatutes; the time of changing is certainly an inconvenient one. Various opinions are held, whether theſe public meetings are advantageous or not to the intereſt of agriculture. Mine would be decidedly againſt them, were there no other reaſons to be advanced than the facility with which perſons get into ſervice without any reference to character.

N. B. Many labourers are now called in from other counties, eſpecially ſince the rage for canals.

Price of provisions, &c. The price of proviſions is regulated a good deal by diſtant markets, Smithfield, Birmingham, &c. The average price of beef (prime) for ſome years about 3¾*d.* mutton 4¼*d.* veal 4*d.* lamb 4½*d.* pork 4½*d.* bacon 8*d.* poultry of all ſorts dear; fiſh very ſcarce, very indifferent, and very dear; cheeſe 5*d.* *per* pound; butter according to the ſeaſons; wheat flour (the general bread flour) beſt at this time, 2*s.* 6*d.* *per* ſtone (about two years ago it was 1*s.* 9*d.*); fourths now 1*s.* 10*d.* *per* ſtone; barley about 42*s.* *per* quarter; oats from 28*s.* to 34*s.* *per* quarter; hay £5. to £6. 10*s.* a ton; ſtraw from £2. 10*s.* to £3. 10*s.* *per* ton; Coals at the pit 4½*d.* *per* 112 lb.

Land draining. Under-draining is in high repute; the methods purſued depending on the nature of the land to be improved. Bogs are drained by deep cuts, and hollow drains of brick or ſtone. Some wet lands alſo are drained with pebbles, and ſome with bruſh-wood, thorns, &c. with which they can only look for an advantage of a few years continuance. A great deal is done with turf, to carry off the ſurface-water, and land-ſprings, which ariſe in wet ſeaſons only. Some very capital improvements have been made by the firſt method, and many alſo by turf-draining.

Moles are great enemies to this latter mode, by work down to, and often filling up, the channels in the ſ mer.

The moſt capital improvements have been made u the direction of a Mr. Elkington, who is ſuppoſed to the firſt in that line in the world. After forming the dr by beginning at the fall, and working upwards, he m uſe of a borer to find the ſpring, with which he gene ſucceeds, which has a wonderful effect in draining the l It is ſaid that he has a very quick and certain metho finding where the ſprings lie, peculiar to himſelf.

By the uſe of the borer, Mr. Aſtley had a piece of drained, without going into it, by the following circ ſtance. Mr. Elkington was employed in draining a of land belonging to Mr. Richard Aſtley, which wa parated from his brother's by a ſmall river or deep riv Mr. Elkington, finding the ſpring at about ſixteen from the ſurface (under the bed of the river) compl drained both pieces. I was informed, that ſome time Mr. Elkington was engaged in draining a piece of near Lutterworth; and ſoon after he had found (call it tapping the ſpring) the ſpring, the inhabitan their very great ſurprize, found their wells all dry. inveſtigating the cauſe, it was found that Mr. Elki had been the means of it, by cutting off the ſpring w ſupplied the town with water. I mention the abov inſtances merely to ſhew what a wonderful effect the has, and what a very capital inſtrument it is for drai The borer is of the ſame kind as the inſtrument mad of for boring in ſearch of pit-coal, &c. the lower part the ſhape of a large auger, from 2½ to 3 inches in d ter. It is made in different lengths, and ſcrews one the other to any length you chooſe. It is worked b men, who, after they have bored down one piece int

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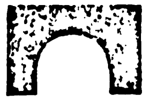
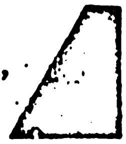
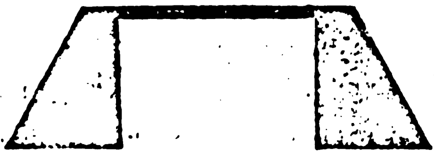
ground, ſcrew on another length, and ſo on till the ſpring is found, or as deep as they think proper. The borer above the auger part is about an inch ſquare; and the men have each of them an iron bar, one end of which is fitted to the ſquare part of the borer which ſerves as a handle to aſſiſt in boring. I do not mean to ſay that Mr. Elkington is the only perſon that makes uſe of the borer; for there is ſuch a very great ſpirit for this kind of improvement, that there are very few of the beſt farmers without this inſtrument.

Mr. Elkington has ſo much buſineſs, that it is with great difficulty he is to be had when wanted. He is generally paid by the piece; but when by the day, one guinea and his travelling expences. He has two ſons, whom he is bringing up in the ſame line.

Bricks are made on purpoſe for this work. When ſmall drains are wanted, the bricks are hollowed out in this manner,  and by being placed one upon the other form the drain (or pipe). When larger drains are wanted, the bricks are made in this form,  and are placed in this manner,  with a ſtone on the top. The mould preſſing on the ſides of the bricks keeps them firm in their places. Turf is laid upon the ſtone, with the graſs ſide downwards, and the drain filled up with the mould, &c. that came out of it. Theſe bricks are about nine inches long, and coſt 30*s.* *per* thouſand.

ſand. The duty upon bricks is a great hindrance to
kind of improvement. Could it not be taken off?

PARING and BURNING. It is the general opi
that paring and burning will anſwer for two or t
crops, but that the land ſuffers by it ever after. W
practiſed, the land is pared in May, and burnt as ſoon
as poſſible. The aſhes are then ſpread, and ploughed
and ſowed with turnips. Sometimes, after the paring
burning, the land is ſowed with barley.

Mr. Wilkes is (I believe) the only perſon that pra
burning upon a large ſcale, and he, I ſhould ſuppoſe,
carried it farther than any man in England. I was
formed by his bailiff, that they ploughed the land eig
ten inches deep, and burnt it with the refuſe coal f
their pits. By this method they get a ſufficient quanti
aſhes from one acre to manure ſeveral. If I am to j
from the appearance of the land, and the crops of tur
&c. I ſhould ſuppoſe this method anſwered to a very g
degree. Mr. Wilkes has practiſed paring and burning
ſeveral years; and it is not likely a man of his ſenſe w
perſiſt in a thing if he did not find it anſwer. One g
thing in favour of Mr. Wilkes's practice, in my opin
is the great command of refuſe coal, which, when b
to aſhes, of itſelf muſt be an excellent dreſſing for
lands.

Mr. Wilkes thinks the generality of farmers make
proper uſe of the land after the operation of burning,
taking too many crops of corn following, which runs
land out of heart, and then they blame the practice. M
are of opinion, that the action of the fire reduces the qu
tity of ſoil; but, if this was the caſe, I ſhould ſupp
that in many parts of Devon, where paring and burn
has been practiſed (and with ſucceſs) for centuries, t

would be no ſoil left. It is true, indeed, that the Devonſhire farmers are very careful to pare as thin as poſſible, and harrow out as much of the earth from the ſod as they can.

ROADS. The turnpike roads in general are tolerably good; and would be much better, if it were not for the very heavy narrow-wheeled waggons which are employed in the carriage of lime and coals. Theſe waggons carry five tons weight each, conſequently it is impoſſible that the roads can be good where ſuch weights are carried upon narrow wheels. It is to be hoped, when the different canals are finiſhed, theſe waggons will be laid by; and then, and not till then, good roads may be expected in this county.

I met with a variety of opinions reſpecting the proper form for roads. Some were for concave, others for convex, and others were for having them quite flat.

Mr. Bakewell and Mr. Wilkes are advocates for the concave. This is nearly the reverſe of the common practice of making roads, by making the middle *the loweſt*, though flat about one third of the width, with a ſmall ſlope from the ſides to the middle, where the beſt materials are placed, and an equal but gradual deſcent, ſufficient to carry off the water from the middle. The road by Diſhley, and that through Meaſham, are both upon this principle, and are certainly in much better order than the roads round about them. The road likewiſe through Bredon was made under the direction of Mr. Wilkes; and Mr. Clarkſon informed me, the road is better now than he ever remembered it before, and kept in order at much leſs expence.

Some of the roads made convex are carried up ſo very high in the middle, that it is dangerous to paſs by the ſides in a carriage, for fear of turning over. When the roads

are

are made in this form, abutments are caſt up to hold the materials

Others ſay, that all roads ſhould be perfectly flat, a proper fall to carry off the water, which may be a gained at a ſmall expence; they argue, that upon roads every part bears its equal proportion of weigh which means they wear more evenly, and are kept in at a much leſs expence; but that the other roads bea greateſt proportion of weight on the loweſt parts, w makes them more liable to be put out of order, a courſe they are attended with more expence. I do no tend to be a ſufficient judge; but I ſhould think, the even the preſſure, the better it muſt be for the roads, believe no one will deny that it muſt be much mor for carriages in point of draught. A gentleman o county (very equal to the taſk) has promiſed to tur thoughts upon the ſubject of making roads at ſome period.

CROSS ROADS. There are many individuals, have been at a great expence in repairing the croſs through their eſtates; but in many parts of the county are infamouſly bad. Indeed, great part of them are be called roads, for they are nothing more than p through the different cloſes (fields) upon the turf, a many of them not the leaſt track of a wheel is to b for miles together. In riding a few miles, you have a tolerable number of gates to open; and in moſt of the roads it is impoſſible to paſs with a carriage.

I viewed with regret a great number of their paſ moſt ſhamefully cut to pieces with waggons, &c. th which thoſe (what are called) roads led; for, when o gets rather deep, the carters immediately take a freſh and ſo on till the field is injured to a very great d

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There is a field near Leiceſter, and through it a road, or rather path, leading to a village, which is ſo ſhamefully cut up that it is of no uſe whatever as a paſture; and, what is ſtill more extraordinary, this field runs parallel with the high road to a great length, and the paſſengers cannot poſſibly ſave twenty yards by going through it. This is by no means an uncommon thing. It is impoſſible to eſtimate the hundreds of acres ſpoiled by this ſhameful practice. Why not make proper roads? I am certain it would be attended with much leſs expence to the landholder, and would be much more convenient both to the traveller and the farmer. The former would have the ſatisfaction of a good road, and the latter the pleaſure of ſeeing his cattle graze in ſound paſtures, undiſturbed by paſſengers.

I by no means wiſh to give offence to any perſon: but I think it a duty incumbent upon me to ſtate facts.

Farm-Houses, &c. Farm-houſes, with few exceptions, are inconveniently ſituated for their reſpective farms, being chiefly in towns and villages, with the lands in many inſtances ſtretching from the homeſtead to the utmoſt verge of the lordſhip; the produce of the extremity often brought to the home-yard, and the dung ariſing from it returned again to the diſtant field. Offices in general are bad; both badly ſituated and as badly conſtructed.

Woods. There is very little timber in this county, except in the hedge-rows. Burbach Wood contains about ſixty acres, with many thouſands of young thriving oaks. Aſton Flamvile Wood, about the ſame ſize, with ſome fine young oaks and ſmall aſh. Theſe, and the woods near Beaumanor, are the principal.

At Cleybrook, and in all that part of the county, there is a great deal of timber in the hedge-rows, which gives it a very pleaſing effect. Some people here are of opinion, t wood is too much encouraged in the incloſures. Ther very little timber even in the hedge-rows on Melton-Mo bray ſide of the county, and what there is is chiefly aſh, w a few oaks and elms, and thoſe are too often ſpoiled by c ting off the under branches. Mr. King (the duke of R land's ſteward) is planting a great number of acres (chie I believe with oak) round Belvoir Caſtle, which in ti will be a great ornament to that part of the county.

There are a few ſpring coppices in the county, whi are coppiced at about twenty years growth.

Mr. Lynes (Lord Wentworth's ſteward) plants aſh a Dutch willow in low-ſwampy ground that cannot be eaſ drained. They are planted on beds twelve feet wide; t rows on a bed, which makes the plants ſix feet from ea other every way. The alleys are dug between the be and the contents thrown on to the beds. They are c once in about fifteen years; and by this method of pla ing land that is not worth five ſhillings *per* acre, it is ma to pay full forty.

MANUFACTURES of woollen yarn and ſtockings a lately much increaſed, and the landed intereſt much ben fited thereby. Within theſe few years cotton mills alſo ha been erected by Mr. Wilkes, which employ a great numb of the induſtrious poor of all ages.

A gentleman informed me, in ſome few pariſhes t poor-rates were conſiderably increaſed of late years, an from a pretty attentive obſervation he had made of t habits and manners of the poorer claſſes, that a very ſma proportion indeed of expence was to be attributed the ſober induſtrious poor, whether labourers or manufa turers. The immoral were generally idle and profligat and there were now few villages where their bad habi

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were not kept in play by the facility with which they could ſpend their earnings in thoſe public nuiſances to every manufacturing village (in particular), the alehouſes; and thoſe were the perſons who upon every little occaſion fell upon the pariſh.

I am happy to ſee, by the Leiceſter papers, that, at a numerous and reſpectable meeting of the inhabitants of Leiceſter, it was reſolved to open a general ſubſcription for the ſale of coals among the labouring poor, at the reduced price of 6*d.* *per* cwt. and that the ſum of £117. 12*s.* 6*d.* was immediately collected for that benevolent purpoſe. I ſincerely hope that every other town in the county will folloſo good an example.

I take the liberty of mentioning an excellent inſtitution, which has lately taken place in the neighbourhood where I live. Labourers of all deſcriptions, belonging to and reſiding in the pariſh, have their bread corn (a ſtated quantity according to their families) at the following prices; wheat at 5*s.* and barley at 2*s.* 6*d.* *per* Wincheſter buſhel. Should any one of the ſaid labourers attempt to commit a fraud on this inſtitution, he is puniſhed by a total excluſion.

Population. From the beſt information, I underſtand that, in thoſe parts where the lands are chiefly employed in grazing, population has conſiderably decreaſed; but, where the plough is more countenanced, population has conſiderably increaſed; which is a farther reaſon that this moſt uſeful implement ſhould be more encouraged.

Catsup. I was informed, by ſome of the inhabitants of Market Harborough, that within theſe few years there has been an immenſe quantity of catſup made in the villages round that town; that the quantity of muſhrooms in the old paſture-grounds was incredible; and that

they were certain no leſs than 200 hogſheads had bee
from that town this laſt ſeaſon.

Hops. In the years 1790 and 1791, four acres of
were planted, by Mr. Herrick of Lubbeſthorpe, nea
ceſter, on a boggy poor meadow, which was prev
drained for the purpoſe. The whole expence amoun
£322.; in the year 1792, the produce of hops was ſo
£30. and the crop in 1793 cleared £50.

Salted Hay. Mr. Baker (of Burſtall) is a gre
vocate for ſalting hay in the rick. He thinks it
healthy for cattle, and finds that they prefer it to ha
ſalted.

Leases, Improvements, &c. Very few leaſ
granted, and thoſe few decreaſe daily. Many far
under very impoper reſtrictions reſpecting plou
Some gentlemen think that the plough cannot be
duced without pillaging their property, although th
trary, in my opinion, would be the reſult under prop
gulations, to which the tenants would no doubt be g
ſubmit. There are many farms under this diſagr
predicament, on which, if a reaſonable proportio
allowed to be in tillage, a conſiderable quantity of
barley, oats, turnips, &c. would be annually raiſe
the remainder of the land, when under a proper ſt
cultivation, would keep more ſtock than at preſent.
land would be improved, and both landlord and
equally benefited. From the beſt information I coul
I underſtood that not *one half* of the corn conſumed
county was cultivated in it; therefore, if the uſe
plough were properly encouraged, it would in a great
ſure prevent the high price that it muſt fetch if br

from other counties. The ſpirit for improvements is very great in this county, particularly by thoſe who cultivate their own eſtates. Theſe men, after expending vaſt ſums of their money for various improvements of their lands, are (when well laid out) certain that they or their families will one day reap the advantage of it. Not ſo with the tenant, who only is allowed to have his eſtate from year to year. This I look upon as a public misfortune, becauſe, wherever this is the caſe, it is impoſſible that any capital improvements can take place (at leaſt by the tenant). What farmer in his ſenſes will be at any very conſiderable expence and trouble more than is abſolutely neceſſary in the improvement of lands, which he holds only from year to year? Some improvements cannot be made but at a very heavy expence, particularly marling upon *dry*, and draining upon *wet* lands. Theſe valuable exertions cannot be expected from tenants at will.

A number of the paſtures are ſhamefully over-run with ant-hills, and to ſo very great a degree, that in many of them the ſurface of one third of the land is nearly thus covered. If you aſk the farmer the reaſon he does not take them away, the conſtant anſwer is, "We are not ſuffered to "uſe the plough, and we cannot remove them without a "very heavy expence by any other method, which will not "anſwer, as I may very poſſibly never be repaid, being only "tenant at will."

Some of the lands are thrown into broad ridges, and, being wet for want of draining, the furrows, which are very deep, are full of ruſhes and other trumpery. If theſe lands were properly drained and laid flat, the value of them would be much increaſed both to landlord and tenant. On enquiry, I ſeldom found the lands which were occupied by the proprietors over-run with ant-hills, or thrown on to broad ridges.

I have been told that the tenants are perfectly co
without leaſes : that, however, is queſtionable ; a
one circumſtance, I am perſuaded, could tend more
advantage of the landholders than granting leaſes
proper reſtrictions, which is very eaſy to be done,
in other counties, to the mutual benefit and ſatis
of both parties. Without leaſes, is it to be wonde
that farmers ſhould be backward in their improve
Even allowing that they are ſatisfied with their preſen
lords, ſtill they are at no certainty ; for life is very
tain ; and there is an old (and very true) ſaying, th
lords new rules. I am certain that, if leaſes were g
the tenants in general would have no objection to
vance in their rents ; for, being at a certainty, they
exert their induſtry by improvements ; the advan
which, in the courſe of years, would more than c
balance their additional expences.

Nothing has retarded improvements more than
men and gentlemen of large fortunes employing ſt
who are ignorant of the principles of agriculture
ought always to be men well verſed in the ſcience
as practice of agriculture. This is not generally the
do not ſpeak merely as to Leiceſterſhire): therefore
rited tenant, who would improve his landlord's prop
well as his own, is prevented from exerciſing his
to advantage. This is a ſubject of the utmoſt conſeq
and cannot be too much attended to. Surely the
receiving the rents, tranſmitting the ſame to the lan
and keeping the accompts, are not all the requiſites
agent, where ſo much is at ſtake.

A CAPITAL IMPROVEMENT. A gentleman inf
me, that he had two eſtates near Leiceſter, one of wh
let a few years ſince for £40. *per annum* ; but, by dr

and manuring with dung from Leiceſter, it is improved ſo much that he now lets it for £ 150. *per annum.* The other he formerly let for £35. and it is now let for more than £100. When he firſt began the improvement, ſtable dung was ſold in Leiceſter for 1*s.* 6*d.* the waggon-load; but, from the very great demand, it has now riſen to 10*s.* or 11*s.* the waggon-load.

The above gentleman contracted with two or three innkeepers in Leiceſter for all their dung, at 1*s.* 6*d.* *per* waggon-load for three years.

Tithes. The payment of tithes in kind is undoubtedly an obſtacle to improvements. In the new incloſures, a certain portion (generally about one ſeventh part) is alloted in lieu of tithes. This plan, however, may in future times be attended with bad conſequences, unleſs particular attention is paid to the property thus given to the church.

Weights and Measures. The following reſolutions reſpecting weights and meaſures, and enforcing due obedience to the laws, appear to me to be highly praiſeworthy; and I flatter myſelf that every other county in this kingdom will follow ſo laudable an example.

" At a general meeting of the ſeveral chairmen of the
" Atherſtone, Litchfield, Boſworth, and Aſhby-de-la-
" Zouch Committees, and of many gentlemen, farmers,
" and others, for regulating the buying and ſelling of
" cheeſe, corn, and grain, by the ſtandard weights and
" meaſures, held at the Caſtle-Inn, in Tamworth, in the
" county of Warwick, the 19th of October, 1793,
" Richard Aſtley, Eſq. chairman, reſolved, That, in
" order to call forth the attention of the public to an obe-
" dience of the laws relating to the ſtandard weights and
" meaſures, we earneſtly recommend all farmers, millers,

" maltſters, and others, to *buy* and *ſell* cheeſe, corn, and " grain, by the ſtandard weight and meaſure only, and " not by any other weights and meaſures. Reſolved, " That we will, from and after the 10th day of November " next, 1793, cauſe to be put in force the laws relating " to the ſtandard weights and meaſures, ſo that the of" fenders may be brought to juſtice and convicted.

" Reſolved, That it appears to this meeting, that the " methods, which have been taken to prevent the above" mentioned laws being violated, have not had the deſired " effect; as well alſo, that no regard hath been paid to " the determination of the Court of King's Bench, in " Trinity Term 1792, in the caſe of the King againſt J. " Major; and alſo to another determination of the ſame " court in Trinity Term laſt, in the caſe of the King " againſt J. Arnold, whereby the juſtices convictions were " affirmed; but that the ſame laws continue to be evaded " and broken, to the very great detriment of the public, " and more eſpecially of that uſeful body of people, the " mechanics and labourers, whoſe welfare we ſincerely " wiſh to promote:

" Therefore, we order our treaſurer to pay to every " perſon and perſons, who ſhall inform againſt any one " offending againſt the ſame laws, ſo that ſuch offender or " offenders may be brought to juſtice and convicted, the " ſum of *five guineas*, over and above the penalties (viz. " 40*s*. and the value of the corn ſold) which ſuch informer " will be entitled to upon ſuch conviction.

" Reſolved, That we will not, from and after the ſaid " 10th day of November next, 1793, buy or ſell cheeſe, " corn, or grain, in any other manner, or by any other " weight or meaſure, than the ſtandard weight and mea" ſure.

" Reſolved, That we will contribute to any further " legal expences which may be incurred in proſecuting

" this buſineſs; and that ſuch perſons, who ſhall be deſirous " of ſubſcribing to this meeting, may pay their ſubſcriptions " (2*s.* 6*d.*) to our treaſurer.

" Reſolved, That Mr. Owen, attorney, of Atherſtone, " be appointed ſolicitor and treaſurer of this meeting.

" Reſolved, That theſe reſolutions be inſerted twice in " the Birmingham, Coventry, Leiceſter, Derby, and " Nottingham papers; and that 3000 hand-bills, containing " the above reſolutions, be printed, and circulated through- " out the counties of Warwick, Stafford, Derby, Notting- " ham, and Leiceſter.

" Reſolved, That the thanks of this meeting be given to " our chairman.

" RICHARD ASTLEY, Chairman."

AGRICULTURE SOCIETY. There is a ſociety which meets annually on the fourth Wedneſday in October at Leiceſter. It conſiſts of about one hundred members. The Earl of Moira is the Preſident; William Pochin, Eſq. M. P. and J. Peach Hungerford, Eſq. Vice-Preſidents. At the laſt meeting, an experimental farm was fixed upon, which they are about to take in Queniborow lordſhip. This farm is to be under the direction of the firſt and moſt practical men in the county; and I have no doubt but that, in the courſe of a few years, many very valuable experiments will be tried, and much light thrown on the moſt important branches of agriculture.

I have thus endeavoured, to the beſt of my abilities, to give ſuch a detail of the huſbandry and ſtock of this county as may meet the views of the Patriotic Board by which I have been employed. A province more intereſting is not to be met with in the kingdom. The almoſt unrivalled excellence to which it has carried various ſorts of live-ſtock has rendered Leiceſterſhire an object of general attention; and the uncommon zeal and abilities, with which many indiv duals have contributed to the eſtabliſhment of a reputatio ſo well deſerved, altogether called for talents in the Su veyor to which I feel little pretenſion. I hope, howeve that I have been able, by an aſſiduous induſtry, in ſom meaſure to anſwer the object of the board, and to offer t their attention an arrangement of ſuch uſeful facts as may la a foundation for a more perfect account, by means of ſuc additional information as numberleſs individuals will have in their power to contribute.

DE

DESCRIPTIONS OF THE IMPLEMENTS OF HUSBANDRY MADE BY MR. HAHFORD, OF HATHERN, LEICESTERSHIRE.

1. Double trenching-plough. Price £6. 6*s.*

The uſe of this double plough is to go deep. The firſt ſkims the turf, and lays it in the bottom of the former furrow; and the other brings up freſh mould, in order to cover the turf, by which eaſy proceſs the land is immediately prepared to receive the ſeeds of grain, &c.

2. A two-wheel plough with check chain. Coſts, with a double ſet of ſhares, £3. 3*s.*

The uſe of the check chain is to pull the wheel up, to be out of the way, when they open ridges, or clear up furrows.

3. The double plough. Coſts £5. 5*s.*

This plough has been uſed in this county about thirty years, and few farms of any ſize are without them. They require ſix horſes or oxen, with a man and a boy, in the breaking up turf; but only four horſes, with one perſon, in the ſtirring of fallows, &c. Ploughs two acres a day, and goes very ſteady without holding from one end of a field to the other. The horſes are all at length.

4. A one-wheel plough, with a ſkim coulter. Coſts, with a ſpare ſhare, £3. 13*s.* 6*d.*

This plough may be uſed with the ſkim coulter or with the common coulter, and is very much approved of.

5. The common long plough. Coſts, with a ſpare ſhare, £2. 2*s.*

This plough is found to anſwer upon ſtiff clay land. The length of the mould board cauſes it to go eaſier and ſteadier than the ſhorter ones, as it is not ſo liable to be thrown out of its work.

The objection made to the length of the mould-board by the generality of the people is found by many practical farmers, and their ploughmen, to be a very great error, as a long mould-board, ſpread at the tail, a foot, (or any other given diſtance) paſſes through the land much eaſier, and ſupports the furrow much better, than a ſhort mould-board, which is ſpread equally at the tail. It is well known that a long veſſel will paſs through the water much eaſier and faſter than a ſhort veſſel of the ſame width.

6. The common one-wheel plough. Coſts, with a ſpare ſhare, £2. 15*s.*

7. The draining plough. Coſts £3. 3*s.*

8. The double mould-board plough. Coſts £2. 12*s.* 6*d.*

This plough is uſed to earth up cabbages, potatoes, &c.

9. The improved ſchuffler. Which coſts £5. 15*s.* 6*d.*

Schufflers in general are found to clog, but this pulverizes the land, without clogging, or any other inconvenience. It is made to be drawn either with horſes abreaſt or at length.

The wheels are eighteen inches in diameter. The length of the hoes is two feet, allowing for their bending.

This implement has been lately improved, and it is thought will anſwer.

10. The four-ſquare harrow. Which coſts £3. 13*s.* 6*d.*

It is uſed in new incloſures, where the land is rough and unlevel.

11. The harrow with running bulls. Which coſts £3. 3*s.*

The uſe of the running bulls is to prevent their riding on each other, or turning-over. A great number of theſe harrows are made, and found to anſwer very well.

Mr. Hanford had an idea, which he has introduced of late into practice, and which is become very general, of making harrows with the teeth, or tine, of an unequal length—that is, the firſt row of teeth ſhould be one quarter of an inch ſhorter than the ſecond, and ſo on, increaſing the length of the teeth a quarter of an inch through the whole harrow. In this way, in a harrow which generally has ſix rows of teeth, the firſt row will be an inch and a half ſhorter than the laſt or hindmoſt row. A harrow ſo formed not only (he ſays) does more work, but is eaſier cleared of root weeds, or other ſubſtances, by which they are ſo apt to be choaked.

N. B. This method of tining harrows is very common in the ſouth of Devon, where I reſide.

12. The improved car. Which coſts, complete, £5. 16*s.* 6*d.* and, with an iron axletree, £6. 16*s.* 6*d.*

The diameter of the wheels is four feet.—The length of the body the ſame.—The width of the body is three feet ten inches.—The length of the ſhafts extends ten feet.

The rails are intended for carryed turnips, &c.

Theſe cars are very uſeful in carrying manure, &c. and will diſpatch work much quicker and eaſier than any other mode. A good horſe will draw near a ton weight in one of theſe cars.

13. The ſpring-teeth rake. Which coſts 15*s.*

This rake is in ſhape like thoſe ſold by Mr. Cort, but by no means equal to them.

14. The Implement for ſlaughtering cattle. Of which a full deſcription has been given in p. 23.

15. A rake with a joint in the middle. Which coſts £1. 1*s.*

This rake is intended for uneven ground, or when the land is thrown into narrow ridges.

16. The double-hand-rake. Which coſts 4*s.*

This rake is found to pulverize the ſoil much quicker than the ſingle one.

The fork of the hoe is intended to take up haſſocks of graſs, &c.

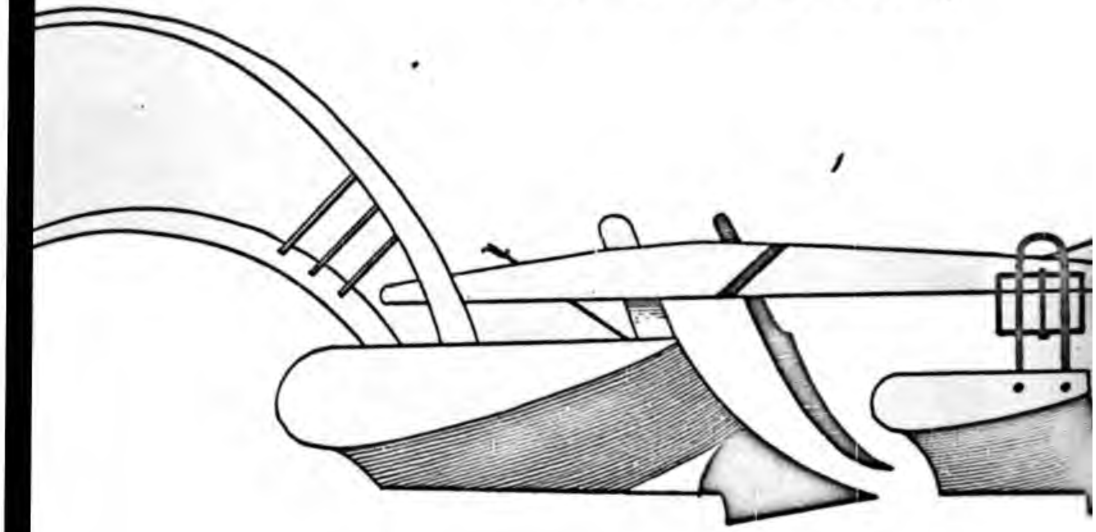
17. The hoe with a fork. Which coſts 5*s.*

❧

DRAWINGS of IMPLEMEN

IN HUSBANDRY,

1



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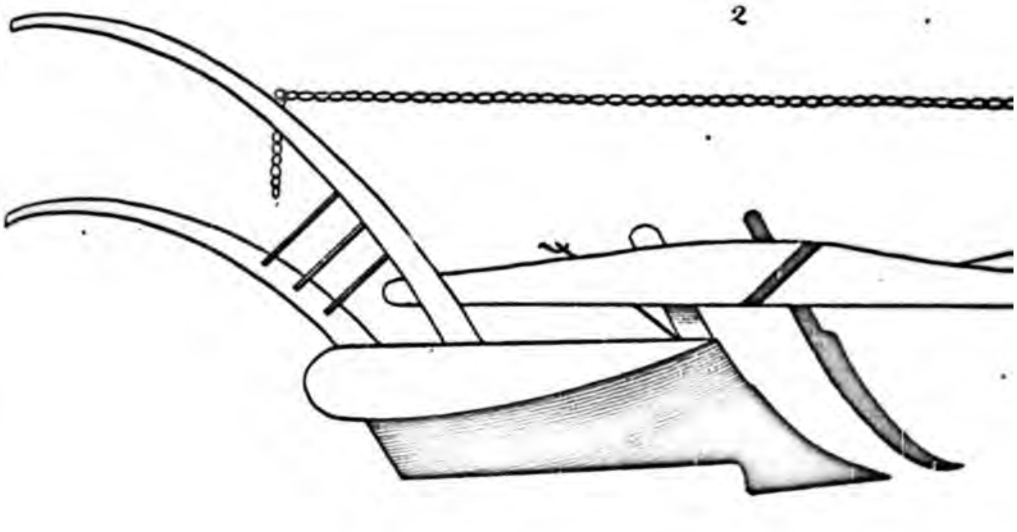
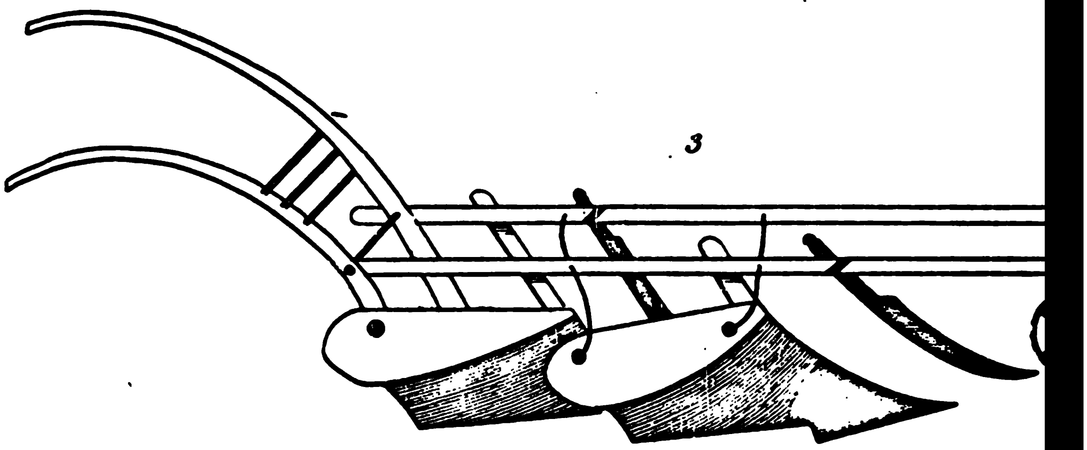


Made by Mr. Hanford,
of Hathern, Leicestershire.

3



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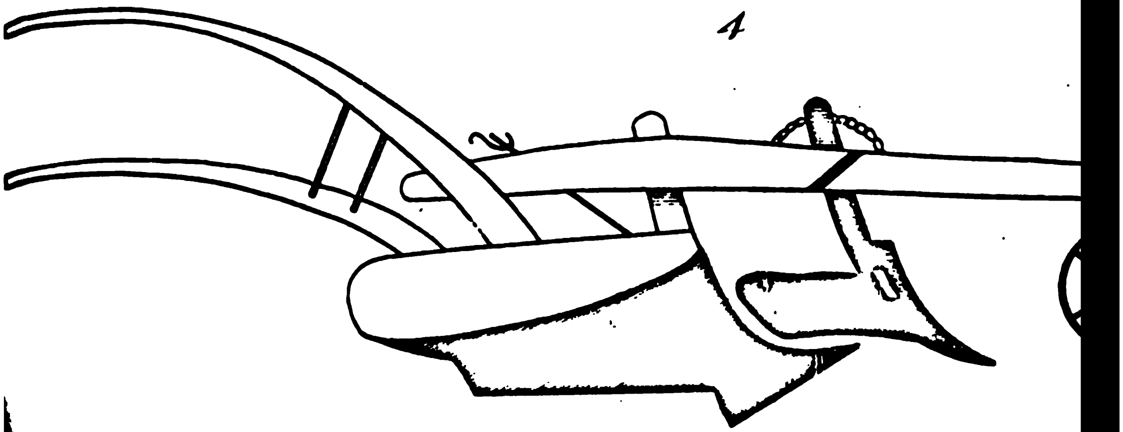

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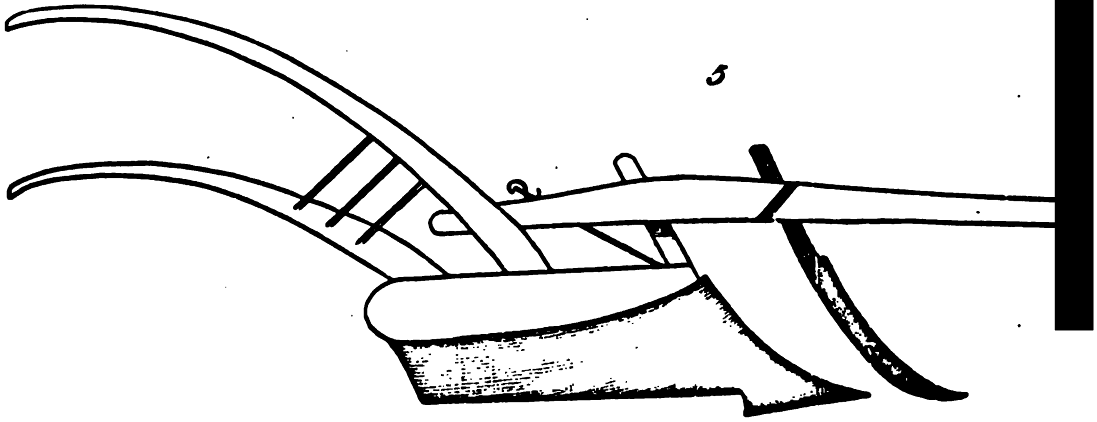

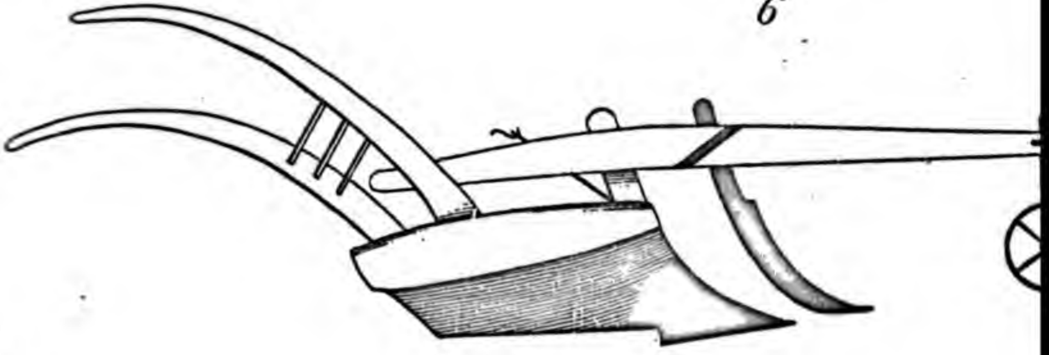

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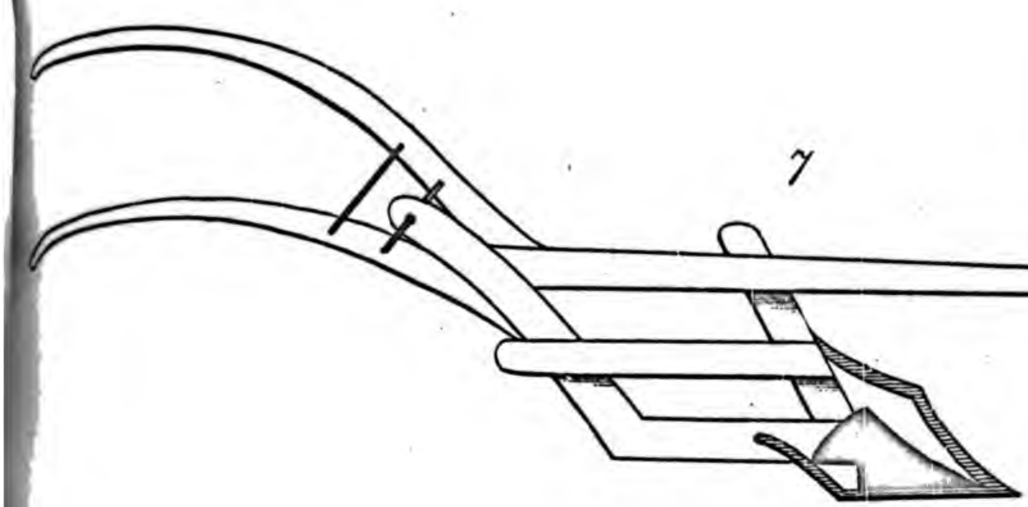

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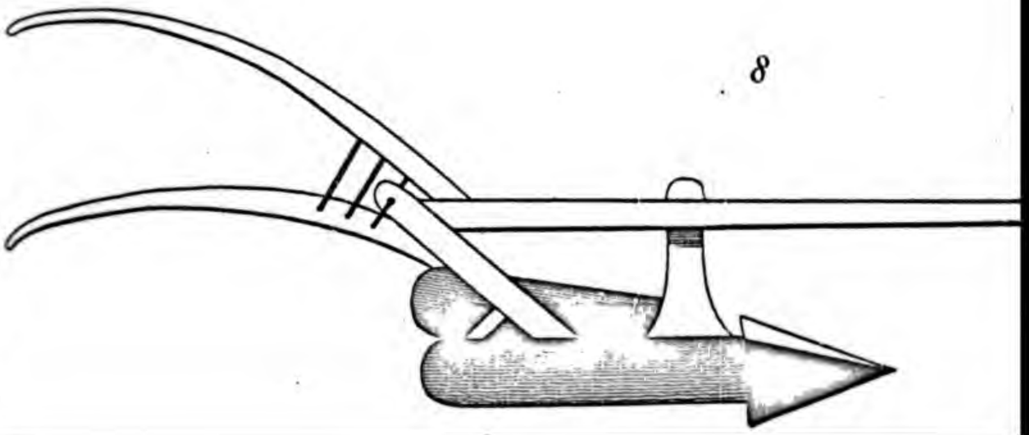

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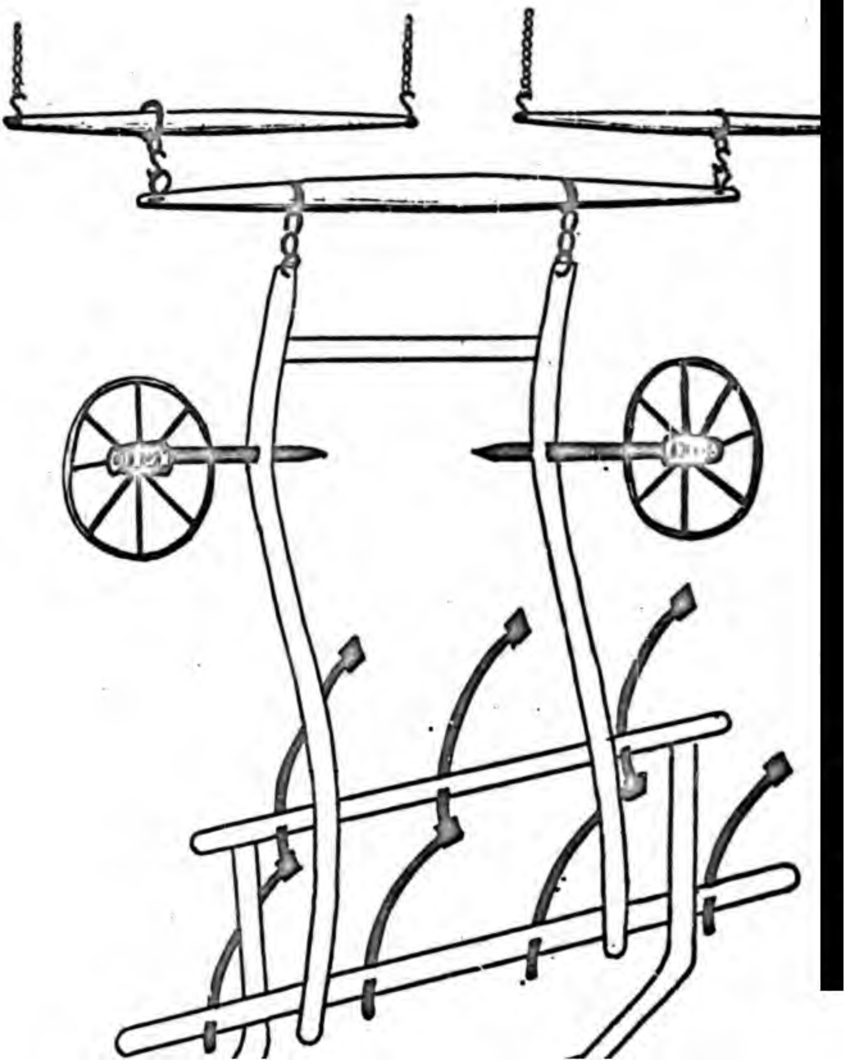

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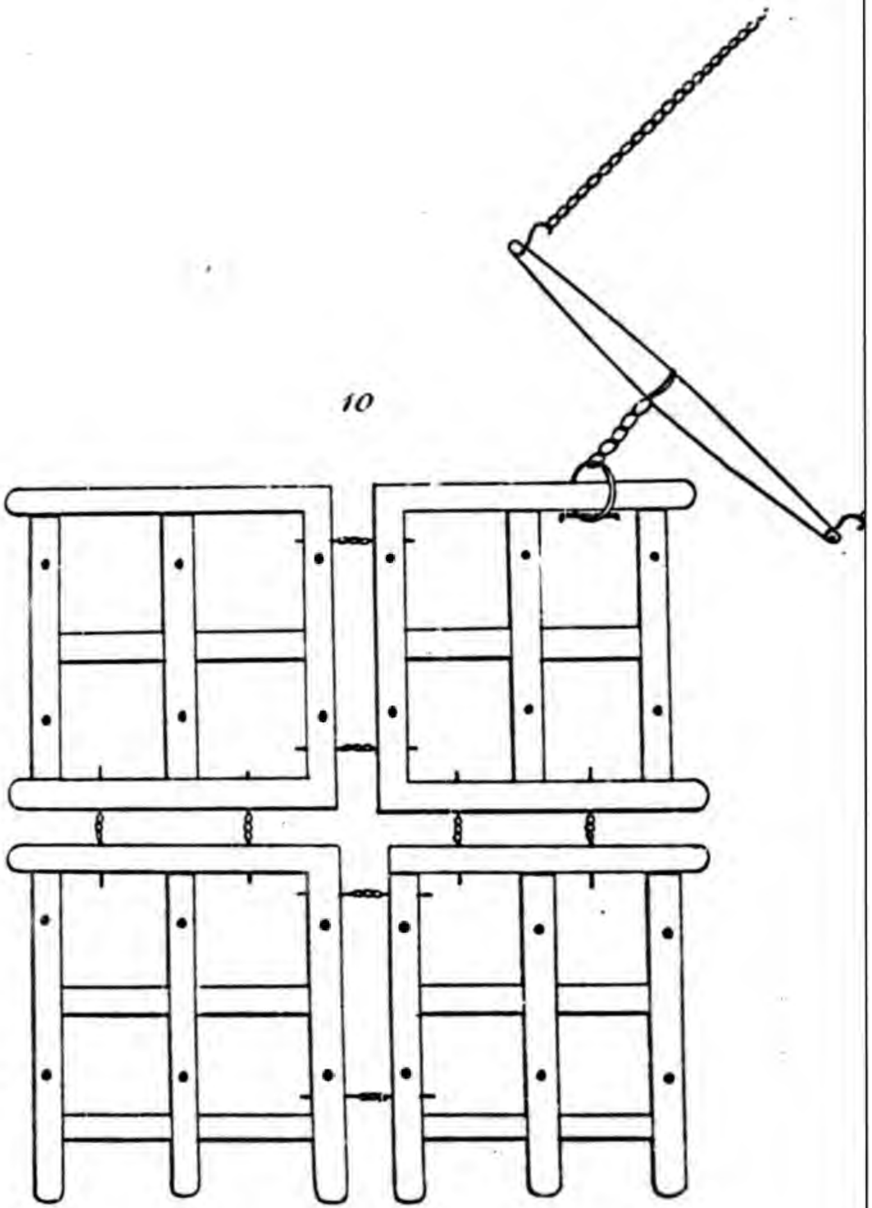

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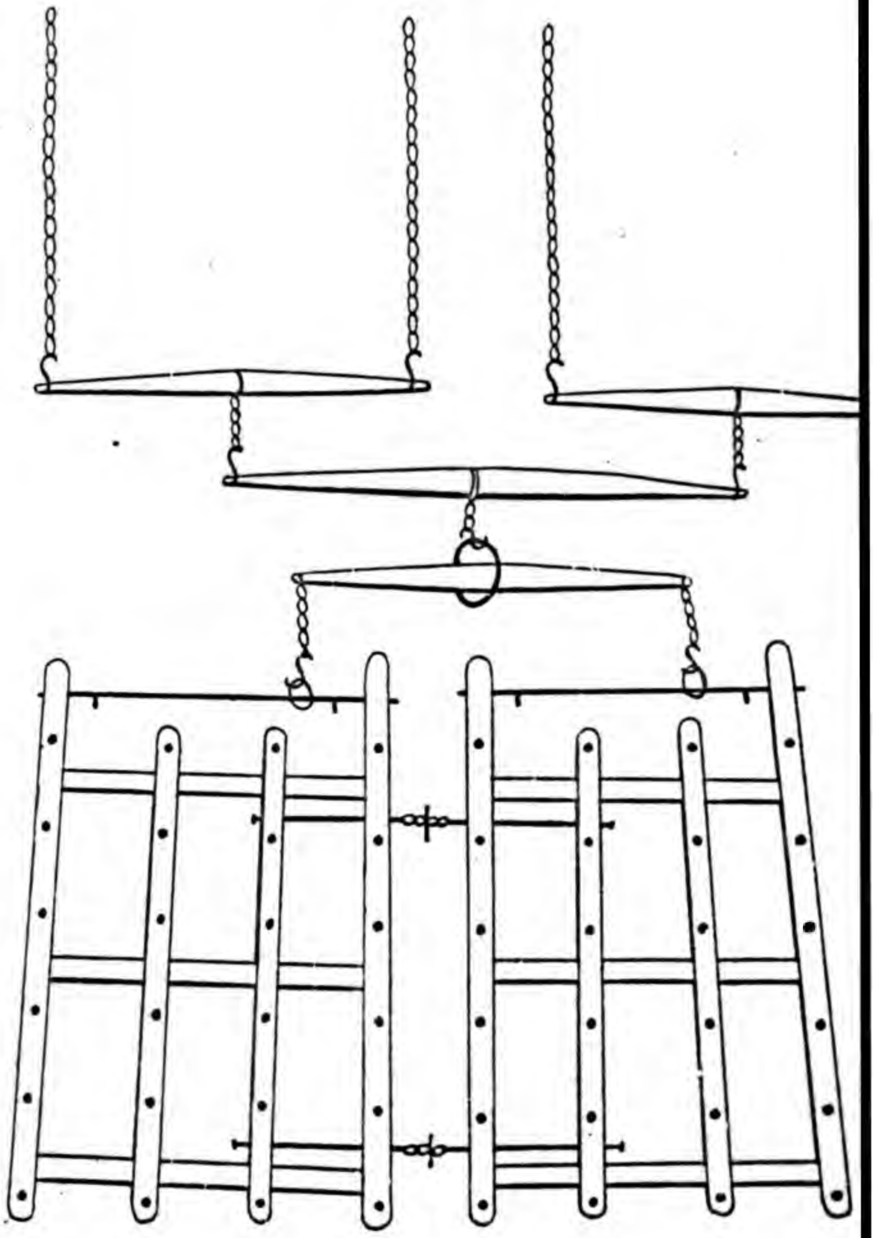

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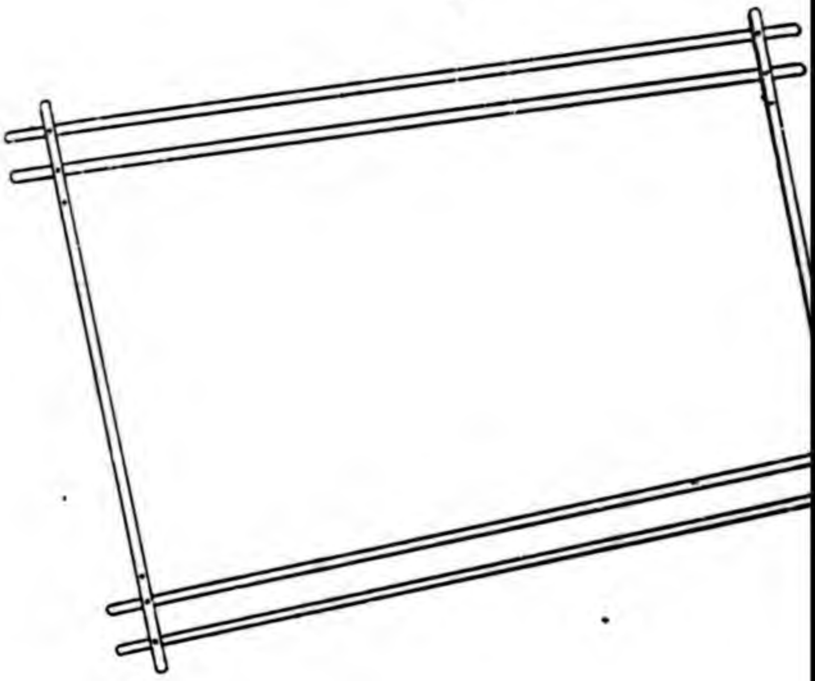

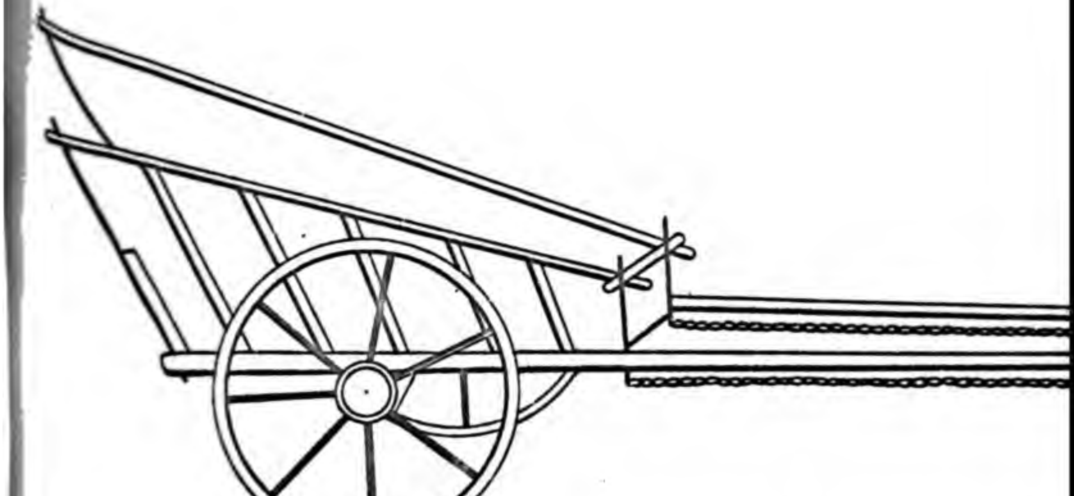

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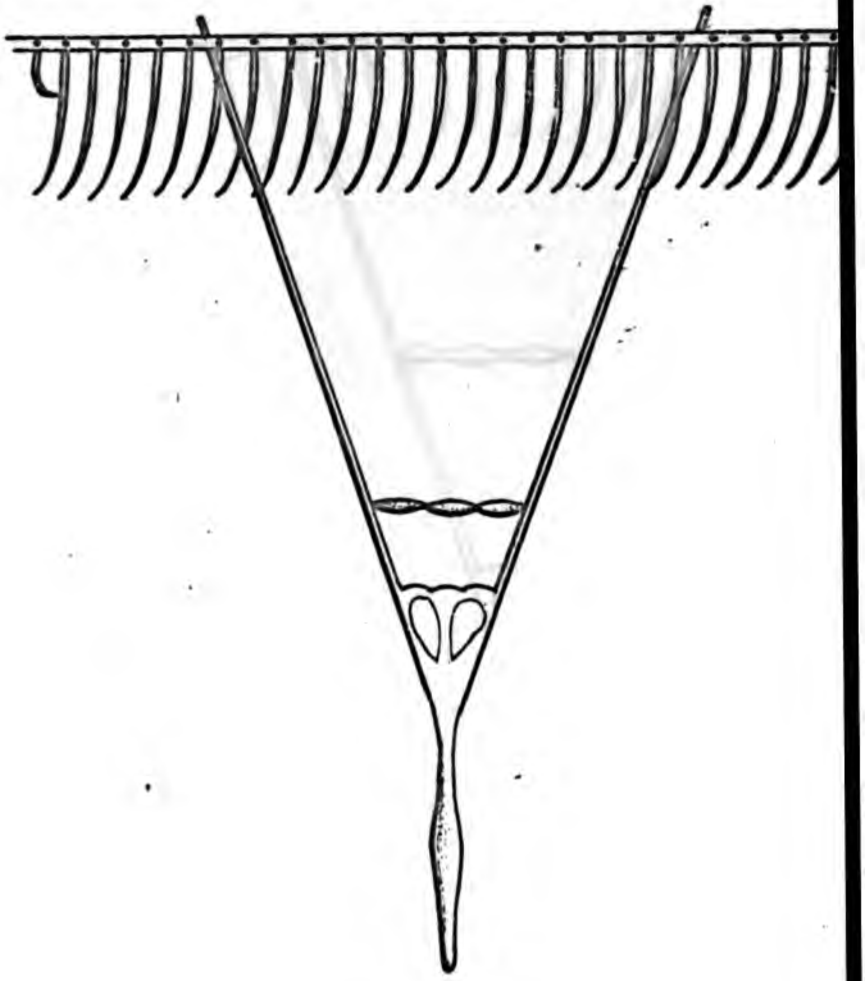

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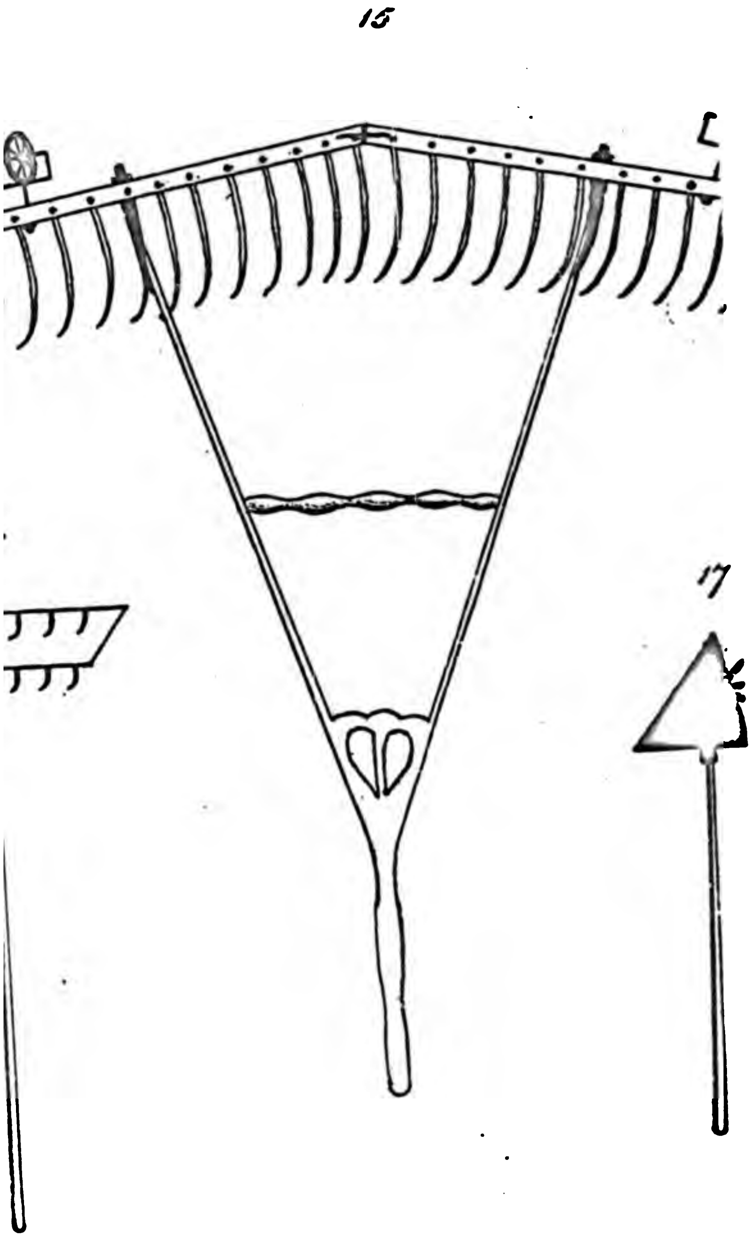
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17

APPENDIX.

PARTICULARS OF THE LORDSHI

⁎ The Date ſpecifies the Year in which the Act for the Encloſure was paſ

Lordſhips.	Acres.	Encloſed or not.	Proprietors.
Abkettleby,	1000,	encloſed, 1761,	Mrs. Bainbridge the principal.
Allexton,	1000,	encloſed,	William Wilſon, Eſq. the principal.
Anſty,	800,	encloſed, 1761,	Earl of Stamford and others.
Appleby, Great,	1000,	encloſed, 1771,	Free ſchool at Market Boſworth.
Arneſby,	1400,	encloſing, 1794,	John Sherwin, Eſq. and others.
Aſfordby,		encloſed, 1761,	Rev. T. B. Burnaby and others.
Aſhby Folvile,	large,	old encloſure,	
Aſhby, Great,	2000,	old encloſure,	Lord Aylesford.
Aſhby, Little,		encloſed,	
Aſhby-de-la-Zouch,		encloſed, 1768,	Earl of Moira and others,
Aſton Flamvile,	1000,	encloſed,	Edmond Cradock Hartopp, Eſq.
Ayleſton,	1200,	encloſed, 1767,	Duke of Rutland the principal.
Bagrave,		encloſed,	Dr. Burnaby.
Bagworth,	2000,	encloſed,	Lord Maynard.
Bareſby,	ſmall,	encloſed, 1792,	
Barkby,	1800,	encloſed, 1779,	William Pochin, Eſq. M. P. the principal.
Barkſton and Plungar,	1000,	encloſed, 1791	Duke of Rutland.
Barlſton,	800,	old encloſure,	Mr. Baker the principal.
Barrow upon Soar,	3000,	encloſed, 1760,	Mr. S. Beaumont, and others.
Barwell,	2270,	encloſed,	Mrs. Aſhby, Mr. Spencer, Mr. Power, &c.
Beaumanor Park,	ſmall,	old encloſure,	William Herrick, eſq.
Beby,	large,	encloſed, 1761,	William Pochin, Eſq. M. P. the principal.
Belgrave,	1600,	old encloſure,	John Beaumont, Eſq. the principal.
Belton,	large,	open,	Mr. Dawſon the principal.

	Acres.	Enclofed or not.	Proprietors.
	large,	enclofed, 1764,	Mifs Heard, the principal.
		enclofed,	John Townley, Efq.
	1600,	enclofed, 1787,	Mr. Smith the principal.
	1750,	enclofed, 1766,	Mrs. Major and Mrs. Bruin, the principal.
		enclofed,	Mr. Willis, the principal,
	4800,	enclofed, 1770,	Duke of Rutland, the half.
t,	large,	enclofed, 1776,	Henry Shuttleworth, Efq. the principal.
	1900,	enclofed, 1766,	Duke of Rutland.
Kirkby,	1670,	old enclofure,	Clement Winftanley, Efq. the principal.
		enclofed, 1759,	Earl of Stamford and others.
	fmall,	enclofed,	Edmond Cradock Hartopp, Efq.
		enclofed,	Earl of Guilford the principal.
	900	enclofed,	George Wrighte, Efq.
ley,	large,	enclofed,	Mr. Garret, Mr. Warner, Mr. Smith, and others.
e,	1100,	enclofed, 1776,	John Clark, Efq. the principal.
	fmall,	old enclofure,	Sir William Manners, Bart. the principal.
	large,	old enclofure,	Marchionefs Grey, Mr. Salifbury, and others.
	large,	enclofed,	John Suffield Brown, Efq. the principal.
	900,	enclofed, 1759,	John Bafs Oliver, Efq. the principal.
	fmall,	old enclofure,	Heirs of Philip Burton, Efq. the principal.
	1800,	enclofed, 1765,	Meff. Colemans and others.
twould,	1800,	enclofed,	Mr. Noon the principal.
	fmall,	enclofed,	Sir Wolftan Dixie, Bart. the principal.
	fmall,	enclofed,	Sir Wolftan Dixie, Bart. the principal.
w,	1500,	old enclofure,	Sir John Palmer, Bart. the principal.
on,	3300,	enclofed, 1737, 1778,	Earl of Moira, Mrs. Bateman, and others.
	800,	old enclofure,	Jacob Turner, Efq. the principal.
Wykeham,		enclofed, 1777,	Duke of Rutland, and others.
ng Claufon,	3500,	enclofed, 1779,	Divided among many.
es,		enclofed, 1694,	Earl of Denbigh, and others.
tle,	430,	enclofed, 1681,	Thomas Dicey, Efq.
		open,	John Frewen Turner, Efq. the principal.
		open,	Sir Jofeph Beaumont, Bart. the principal.
	large,	open,	Lord Wentworth, and others.
	2000,	enclofed, 1767,	Jarvis Clark Jarvis, Efq. the principal.
		old enclofure,	Thomas Babington, Efq. the principal.
	1400,	enclofed,	Captain Phelp the principal.
	fmall,	enclofed,	
	1100,	old enclofure,	Robert Marriot, LL. D.
b	1250,	enclofed, 1766,	Mr. More, Mr. Baffet, and others.
	fmall,	enclofed,	Duke of Montague.
		enclofed, 1779,	Edward Hartopp Wigley, Efq. and others.
		enclofed, 1781,	Earl of Stamford the principal.
d,	large,	enclofed, 1766,	Duke of Rutland the principal.
b,		enclofed, 1792,	
		enclofed,	Nicholas Hurft, Efq.

Dalby

Lordſhips.	Acres.	Encloſed or not.
Dalby on the Woulds,		encloſed,
Dalby, Great,		encloſed,
Dalby, Little,	ſmall,	old encloſure,
Desford,	1100,	encloſed, 1759,
Diſeworth,	large,	open,
Diſhley Grange,		encloſed,
Drayton,	ſmall,	encloſed,
Dunton Baſſet,		half encloſed,
Earl's Shilton,	1500,	encloſed, 1778,
Eaſton, Great,		encloſed,
Eaſtwell,	1000,	encloſed,
Eaton,	1500,	encloſed, 1769,
Edmundthorpe,		encloſed,
Elmeſthorpe,	1280,	old encloſure,
Enderby,		old encloſure,
Evington,	large,	encloſed, 1761,
Fenny Drayton,		encloſed,
Fleckney,	1300,	encloſed, 1770,
Foſton,	1200,	old encloſure,
Foxton,	1755,	encloſed, 1770,
Freathby,	800,	old encloſure,
Friſby,		encloſed, 1769,
Froleſworth,		encloſed,
Gaddeſby,	large,	encloſed,
Garthorp,	1400,	encloſed,
Gaulby,		encloſed,
Gilmorton,	2050,	encloſed, 1777,
Glenfield,	ſmall,	encloſed,
Glen Magna,	2000,	encloſed, 1750, 17
Glen Parva,	780,	old encloſure,
Glewſton,		old encloſure,
Godeby Marwood,		encloſed, 1765,
Godeby,	400,	encloſed,
Grimſton,		encloſed, 1765,
Groby,		encloſed, 1789,
Gumley,	1300,	encloſed, 1772,
Halloughton,	2000,	encloſed, 1770,
Harby,	1800,	encloſed, 1790,
Hareſton,	1000,	encloſed, 1789,
Hathern,		encloſed, 1777,
Hemington,		encloſed, 1789,
Hether,		encloſed,
Higham,	large,	encloſed,
Hinckley,	2000,	encloſed, 1760,
Hoby,	1200,	encloſed, 1760,
Holt,		encloſed,

	Acres.	Encloſed or not.
		encloſed, 1730,
	2000,	encloſed, 1791,
	1246,	encloſed, 1759,
	large,	encloſed, 1765,
		encloſed, 1774,
	1525,	encloſed, 1788,
	ſmall,	encloſed,
		encloſed, 1765,
worth,		encloſed, 1764,
	large,	encloſed,
	400,	encloſed,
	ſmall,	encloſed, 1788,
	2500,	encloſed, 1778,
		encloſed, 1774,
champ,	1300,	encloſed, 1779,
	1020,	encloſed, 1771,
th,	2000,	encloſed, 1765,
h,	1400,	encloſed, 1789,
Walton,	2750,	encloſed, 1778,
	1600,	encloſed, 1775,
	large,	old encloſure,
y,		encloſed, 1771,
	1200,	old encloſure,
s,		encloſed, 1779,
	1581,	encloſed, 1755,
	1270,	encloſed,
	ſmall,	encloſed,
		old encloſure, 16
		part encloſed, 17
	ſmall,	encloſed, 1779,
		encloſed,
		encloſed,
	large,	old encloſure,
n,		encloſed, 1778,
	large,	encloſed,
h,	large,	encloſed, 1759,
		encloſed, 1776,
		encloſed, 1790,
worth,		encloſed,
orough,		no fields,
	large,	encloſed, 1760,
Potter's Marſton,		encloſed,
	2000,	encloſed, 1760,
bury,		encloſed, 1760,

Lordſhips.	Acres.	Encloſed or not.
Miſterton,		encloſed,
Moſeley,	ſmall,	encloſed, 1783,
Mountſorrel,	300,	encloſed, 1731,
Muſton,	1400	old encloſure,
Nailſton,		old encloſure,
Narborough,		encloſed, 1752,
Nether Broughton,	2000	encloſed, 1764,
Nether Seile,		encloſed, 1757,
Newbold Verdon,		encloſed,
Newton Harcourt,	1100	encloſed, 1774,
Newton Linford,	ſmall,	old encloſure,
Normanton Turvile,	950	encloſed,
Normanton on the Heath,		encloſed,
Norton, Eaſt,		old encloſure,
Norton by Galby,	ſmall,	encloſed, 1743,
Norton by Twycroſs,		encloſed,
Oadby,	1780,	encloſed, 1759,
Odſton,		encloſed,
Orton on the Hill,		encloſed, 1782,
Oſgathorpe,	ſmall,	encloſed, 1785,
Ouſton,		encloſed,
Packington (part in Derby),	large,	old encloſure,
Peatling Magna,	900,	old encloſure,
Peatling Parva,		old encloſure,
Peckleton,	2000,	encloſed, 1628,
Pickwell,		old encloſure,
Plungar and Barkſton,	1000,	encloſed, 1791,
Preſtwould,	790,	old encloſure,
Queniborough,	2150,	encloſed, 1793,
Quenby,		encloſed,
Quorndon,		encloſed, 1762,
Ragdale,	1500,	old encloſure,
Ratby,		encloſed, 1770,
Ratcliff Culley,	1160,	encloſed, 1766,
Ratcliff upon Wreke,	1500,	encloſed, 1774,
Ravenſtone,		encloſed, 1770,
Redmile,		encloſed, 1793,
Rereſby,		encloſed, 1761,
Rolleſton,		encloſed,
Rothely or Rodeley,	1900,	encloſed 1777 and 1781,
Rotherby,		
Sadington,	1800,	encloſed, 1770,
Saltby,	2000,	encloſed, 1771,
Sapcote,	1600,	encloſed, 1778,
Saxby,		encloſed,
Saxulby,	1000,	encloſed, 1765,

ps.	Acres.	Encloſed or not.
	2300,	encloſed, 1765,
	large,	old encloſure,
	large,	encloſed, 1760,
on,		encloſed, 1769,
rs (2 lordſhips)		encloſed, 1738,
d,	1400,	encloſed, 1764,
	1100,	old encloſure,
	1100,	encloſed, 1773,
d,		encloſed, 1777,
		encloſed, 1646,
Great,		old encloſure,
Little,	500	encloſed, 1783,
		open,
	large,	encloſed, 1759,
on,		encloſed, 1772,
	1000,	encloſed,
nd Weſterby,	1250,	encloſed, 1780,
		encloſed,
	1300,	encloſed, 1760,
	2250,	encloſed, 1771,
nder Bardon,	600,	encloſed, 1773,
e,		encloſed, 1772,
	ſmall,	encloſed,
	2000,	encloſed,
Harold,		encloſed,
Wyvile,		old encloſure,
lling,	ſmall,	old encloſure,
	ſmall,	encloſed, 1780,
anton,	1400,	encloſed,
h,	1600,	encloſed,
Magna,	400	encloſed,
Parva,	600,	encloſed, 1770,
gnell,	1400,	encloſing, 1794,
		encloſed,
	1400,	encloſed, 1780,
	ſmall,	open,
	1800,	encloſed, 1777,
erth,	1000,	old encloſure,
	2000,	part encloſed, 177
nald,	1200,	encloſed,
ngton, &c.	3000,	encloſed, 1734, 17
chevile,		old encloſure,
on,	2000,	encloſed, 1789,
n,	ſmall,	open,
n,	1500,	encloſed, 1719,
on,		encloſed, 1762,

Lordſhips.	Acres.	Encloſed or not.	Proprietors.
Thurnby,		encloſed,	E. L. Loveden, Eſq. and Rev. Mr. Hun
Tilton on the Hill,		encloſed,	Lord Radnor the principal.
Tugby,	1100,	encloſed, 1784,	William Wilſon, Eſq. nearly the whol
Twycroſs,	large,	encloſed,	P. A. Curzon, Eſq. M. P. and others.
Twyford,		open,	Mr. Aſhby, the principal.
Ulleſthorpe,		encloſed,	Rev. Mr. Wigley.
Waltham,	2400,	encloſed, 1766,	Duke of Rutland the principal.
Walton on Wolds,	1800	encloſed,	Mrs. Bainbridge.
Wanlip,	950,	encloſed lately,	Sir Charles Grave Hudſon, Bart. the p
Wartnaby,	ſmall,	encloſed, 1764,	Mr. Cant the principal.
Welby,	large,	old encloſure,	——— Godfrey, Eſq.
Welham,	1200,	encloſed,	——— Edwards, Eſq. the principal.
Whetſtone,	2025,	encloſed, 1764,	C. Lorraine Smith, Eſq. and others.
Whitwick,		open,	Repreſentatives of Samuel Bonnet, the
Wigſton, Great,	3000,	encloſed, 1764,	Duke of St. Albans, John Clark, Eſq. a
Wigſton, Little,	ſmall,	encloſed,	Jonathan Grundy, Eſq. and others.
Willeſley (part co. Derby)		encloſed,	Thomas Abney, Eſq.
Willoughby Waterleſs,	1200,	old encloſure,	Miſs Mary Levit the principal.
Wimeſwould,	ſmall,	encloſed, 1757,	Mr. Alſop, college land.
Wiſtow,	892,	old encloſure,	Counteſs of Denbigh.
Witherley,		encloſed,	Mr. Bracebridge the principal.
Wiverby,	ſmall,	old encloſure,	Edward Cradock Hartopp, Eſq. the princ
Woodhouſe,		encloſed,	William Herrick, Eſq. the principal.
Woodthorp,		encloſed,	William Herrick, Eſq.
Worthington,		open,	Earl Ferrers.
Wykin,	ſmall,	encloſed,	William Burleton, Eſq. the principal.
Wymondham,	very large,	old encloſure,	Earl of Harborough the principal.

The above is the moſt accurate account of the lordſhips I could procure ; there may be ſome that are not inſerted, and others that are not altogether cor

x The above Statement is still very inr
as above 60 Lordships are ommitted

E R R A T A.

Title-page, for "*Knightſbridge*," r. "*Kingſbridge.*"
Page 17, line 6, for "*ſallow*," read "*ſurrow.*"
27, 9, r. "On viſiting," &c; and l. 10, r. "his flock," &c.
Ibid. 17, read "brought in, and ſo on. I obſerved," &c.
Ibid. 31, read "the others appearing much worſe."
31, 7, for "*impudence*," read "*imprudence.*"
34, 6, read "old breed grows larger."
39, 22, for "oat-meal," read "cut-meat."
65, 2, read "Mr. HANFORD."
68, 6, for "*carryed*," read "*carrying.*"

GENERAL VIEW

OF THE

AGRICULTURE

OF THE

COUNTY OF DURH

GENERAL VIEW

OF THE

AGRICULTURE

OF THE

COUNTY OF DURHA

Particularly that Part of it extending from the TYNE to the TEES;

WITH

OBSERVATIONS ON THE MEANS OF ITS IMPROVEMEN

BY JOSEPH GRANGER, LAND-SURVEYOR,
HEUGH, NEAR DURHAM.

TOGETHER WITH THE

PRELIMINARY OBSERVATIONS OF SIR WILLIAM APPLEBY.

DRAWN UP FOR THE CONSIDERATION OF THE Gt. Brit BOARD OF AGRICULT
AND INTERNAL IMPROVEMENT.

LONDON:

PRINTED BY COLIN MACRAE.

1794.

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TO THE READER.

IT is requested that this paper, may be returned to the Board of Agriculture, at its Office in London, with any additional remarks and observations which may occur on the perusal, *written on the margin*, as soon as may be convenient.

It is hardly necessary to add, that the Board does not consider itself responsible, for any fact or observation contained in this Report, which at present is printed and circulated, for the purpose merely of procuring farther information, respecting the husbandry of this district, and of enabling every one, to contribute his mite to the improvement of the country.

The Board has adopted the same plan, in regard to all the other counties in the united kingdom; and will be happy to give every assistance in its power, to any person, who may be desirous of improving his breed of cattle, sheep, &c. or of trying any useful experiment in Husbandry.

LONDON, JULY, 1794.

COUNTY OF DURHAM.

PRELIMINARY OBSERVATIONS

BY

SIR WILLIAM APPLEBY, OF DURHAM.

THE City of Durham, the capital of the county of that name, is placed, by the acknowledgement of all travellers of taste and discernment, in one of the most beautiful and picturesque situations in Europe. It lies in the centre of the county, in latitude 54 degrees, 50 min. N. and one degree, 27 min. W. longitude from London. It is above 260 miles due North therefrom, 66 North from York, 15 miles South from Newcastle, and 121 South from Edinburgh. This City stands upon seven hills, surrounded by the like, still higher, embellished with several gentlemen's elegant seats, and makes a most romantic and grand appearance, to every beholder upon entering it, from all directions, especially to those who have never before seen it. It may be compared to crab, for its form, extending from its centre near a mile every way. It is almost surrounded, as well as intersected by the river Weare, over which are three large stone bridges, two of them particularly elegant and handsome, but the one called Elvet bridge is a very great and dangerous public nuisance, from its narrowness in not permitting the large waggons and other carriages to pass each other thereupon with safety; and being the high road from London to Edinburgh, ought not to

be

be suffered to remain in its present disgraceful condition upon any consideration, more especially when it may be widened several feet for a few hundred pounds. It is therefore hoped, the honourable Bench of Justices will, for their own credit, and the public safety, give immediate directions to their surveyors to inspect the same, and order it to be improved accordingly. This city contains near 2000 houses and 9000 inhabitants, and being remarkable for the salubrity of its air, the abundance and cheapness of all sorts of provisions, coals, house rent, &c. hence a great many very respectable families are induced to reside there; and if the very valuable commons, contiguous thereto, on the north side, were divided, and that great nuisance of the inter-commons abolished, it would infinitely contribute to the benefit of such proprietors, as well as to the beauty and advantage of the city and its environs. The two parishes of St. Oswald and St Margaret, in the said city, though different manors, have long since set the laudable example, by obtaining an act o parliament for the division and extinction of their similar appendant commons, and inter-commons, and have found th beneficial effects thereof in every respect. It is therefor much to be wished, that a similar plan may soon be adopted under the patronage of their present honourable and worth prelate, who is lord of the manor of all such commons, an who, we rejoice to hear, is so zealous and active a member o the Board of Agriculture. From that Board every assistance we trust, may be expected, whenever such an important object is agitated in parliament, if a general bill for the divisio of all the commons in the kingdom is not previously passed which, so much to the credit of that respectable an patriotic institution, is, we understand, already in contemplation.

An infirmary in the said city has lately been erected an established by voluntary contribution, of which the lord Bishop of Durham is President.

Durham is the see and residence of a Bishop, who is lord-paramount of the county, also of a Dean and Chapter consisting of 12 prebendaries, and a corporate town of both burgesses (or freeholders of the city) and divers trades or fraternities of freemen, jointly incorporated by various charters granted by several bishops, which two DISTINCT BODIES of men are equally entitled to an exemption from all manner of tolls in every market in the county, within the jurisdiction of the said Bishop. The same privilege is, or ought to be, enjoyed by every burgess (or freeholder) of his own town, subject as aforesaid, comprehending every market town in the county, except Barnardcastle.

There is also a grand gothic cathedral, and a castle, which have a beautiful effect from their elevated situation, and are both undergoing a thorough repair, at a prodigious expence to the Bishop and Chapter. The cathedral would appear to the greatest advantage, and much to the embellishment of the place, if the present worthy and honourable Dean and Chapter, would cause two or three old houses contiguous thereto to be demolished, and rail it round, *similar* to St. Paul's, when a commodious carriage way to the courts of law, castle, and church, would be obtained. The city contains six other parish churches, besides several Romish chapels and dissenting meeting-houses. The whole place has lately been exceedingly improved, in consequence of an act of parliament, obtained about four years ago, for the paving, lighting, and cleaning it, through the recommendation, spirited endeavours, and countenance, of the late worthy Dean, Doctor Hinchcliff, Bishop of Peterborough, George Finch, Esq. then Mayor, and several other gentlemen, more particularly the two present worthy members for the city, John Tempest and William Henry Lambton, Esq. who generously paid the whole expence of an application to parliament for that laudable and beneficial purpose, and whose ancestors have had the honour to sit for this city, or county, for several generations;

and it were much to be wished, that every town and county in this kingdom were always equally well represented.

There are also two very capital woollen manufactories of stuffs, shalloons, flannels, carpets, &c. carried on here by Messrs. John Starforth and Son, and Messrs. Christopher Allen and Son, employing great numbers of industrious workmen, and causing a great circulation amongst tradesmen weekly.

HILLS NEAR THE CITY.

THE County Palatine of Durham, for its dimensions, is perhaps one of the most hilly, though certainly by no means the highest, of any in the kingdom. The hills in general are covered with fine verdure to their tops, and many of them contain lead, coal, iron, marble, lime-stone, free-stone, &c. in abundance, as will hereafter be described.

The highest hill therein is about five miles west of the city, lying in the centre of a large estate belonging to the Earl of Shaftesbury, on which has been erected, many centuries ago, a large beacon (still complete) for the purpose of alarm in times of danger, from whence may be seen the most extensive and beautiful prospects perhaps in this Island, such as below mentioned; and if an observatory of 20 or 25 yards high were erected thereon, it would be a grand sea mark, and if properly executed, in all probability both the German and Atlantic Oceans might be seen at once. From the above-mentioned eminence may clearly be distinguished from eight to ten regular built castles, innumerable gentlemen's seats, the mouths of three navigable rivers, the German Ocean for 60 miles north and south, with the ships thereon, and also those lying in Shields harbour, with a land prospect of 60 or 70 miles each way in the same direction,

tion, and 100 towns and villages at the same time, extending as far as the city of York and its celebrated cathedral, to the south; and to the Cheviot hills, on the borders of Scotland, to the north. From many other eminences adjoining to the city may be seen the most beautiful proſpects, though not so extensive.

For a more minute and elaborate description of this famous city and county, the reader is referred to the elegant History of Durham, by Mr. Hutchinson, in three volumes 4to.

COAL MINES.

THE east and north-east parts of this county are particularly noted over Europe for their very valuable coal mines, which, from the numerous strata or seams now worked, being five in number, lying horizontally from 20 to 100 fathoms deep, running through the county for many miles, and each stratum from three to six feet thick, and easily conveyed to the navigation by means of large and expensive waggon ways, render them an inexhaustible fund of riches to their numerous proprietors, as well as to the farmers in the neighbourhood, employing many thousands of industrious workmen and their families, and causing an immense circulation of money in the adjacent towns, to the great encouragement of trade, agriculture, and population, not only there, but at a distance also; for most of the grounds contiguous to the mines are appropriated to meadow and pasture for the keeping of cows, and of work horses for the coaleries above and below, though the number of the first mentioned horses, are greatly, if not principally reduced, by the erection of steam engines for drawing of coals instead of horses, and is performed with greater facility and dispatch, less expence, and more safety.

From the experiments lately made by the agents of the two city members, who are the most capital coal-owners upon the river Weare, I find there are several more strata or seams of coal lying still deeper, which could be worked, if necessary, at any reasonable depth, by means of the above-mentioned improved engines, with equal facility as at present, so that the city of London, and many other parts, need not be, as it is notorious many have been, under apprehensions, that such mines would soon be exhausted; for independent thereof, the greatest part of the county is stored with the like valuable and useful article, above the present navigation, that can easily communicate therewith, if at any time required, (a perpetual Bill for that purpose having long since been obtained) and consequently would last for many thousand years, both upon the Tyne, and the Weare, or Were.

In most of the capital sea-sale coaleries, great numbers of horses are continually kept under ground, for the purpose of drawing the coals to the mouth of the pit. The like work, in the land-sale ones, is performed by men or boys.

I will not attempt, like many ignorant and visionary theorists upon the nature and origin of coal, to presume to insult and mislead the understanding of the reader, or of the honourable Board of Agriculture, by asserting, as many authors have recently done, "that coal grows, that it has been "formed by trees formerly deposited in the earth;" or "that "it is a vegetable fossil." No! Its lying, stratum super stratum therein, horizontally, at great depths, for many miles, must convince every intelligent person, that it has laid there *ab initio*, and doubtless is a mineral, and not a vegetable fossil, intended by the great Creator for the use and comfort of the human race.

CAST METAL AND IRON FOUNDERIES, WINDMILLS, WATER, CORN, AND PAPER DITTO, COMMON BREWERIES.

THERE is a very capital foundery for cannon and every other article, large and small, near Chester le Street in this county, carried on by John Cookson, Esq. and another at Washington by William Russel, Esq. employing a vast number of workmen, and causing prodigious sums of money to circulate in the neighbourhood, thereby increasing its population amazingly. Several iron manufactories are also established, particularly one very lately for the making malleable iron, &c. at Lumley; but the most capital in these kingdoms are two at Swalwell and Winlaton, carried on to an amazing extent by the family of the Crowleys and their descendants, employing many thousands of people. The articles there made, are exported to all parts of the world.

Numerous large common breweries, wind and water corn mills, and water paper mills, extend over the whole county, particularly upon and near the rivers Tyne and Weare.

In short, the stupendous works, and busy populous scenes, upon and adjoining these two rivers, are indescribable, and scarcely to be credited, but by those who have been eye-witnesses of them.

QUARRIES OF MARBLE, FREE-STONE, FIRE-STONE, LIME, &c.

THE neighbourhood of Walsingham produces a beautiful black spotted marble for chimney pieces, hearths, mortars, and many other uses, and is the only place in the county for the large grey mill-stone for grinding of corn.

The whole county is well stored with excellent quarries of fine stone slates, flags, &c. for building; also with numerous sorts of lime, brick and tile kilns of various kinds. Gateshead Fell in this county is peculiarly noted, through the whole habitable globe, for producing and exporting what are vulgarly, though erroneously, called Newcastle grind-stones, on account of their being shipped from thence. There are also several equally noted quarries of excellent fire-stone, which is in high estimation and use for furnaces, ovens, &c. and is exported in immense quantities to different countries.

The county of Durham contains the sea-ports and trading towns of South Shields, Sunderland, Monk-Wearmouth, Bishop-Wearmouth, Hartlepool, Stockton, and Swalwell, with several others of less note adjacent to the three navigable rivers, the Tyne, Weare, and Tees, from whence are exported its various products and manufactures to very great amount. There are, besides, many capital populous towns therein, carrying on large and various manufactories of linen and woollen cloths, spinning mills for linen, yarn, &c. viz. Darlington, Barnardcastle, Staindrop, Middleton in Teasdale, Stanhope in Wearedale, Walsingham, Auckland, Norton, Sedgefield, and Chester le Street, most of which are market towns, well supplied with all kinds of provisions, for the sale of which markets are held at some place or other in the county, every day in the week, Sundays excepted.

It is also calculated that there cannot be fewer than 300 large and small populous villages, and that in the whole county, and its dependencies, containing 120 large parishes, there are not less than 150,000 souls. I presume it will therefore be readily admitted, that it is not to be equalled by any other county in Great Britain (taking its small dimensions into consideration) except Middlesex, for its numerous and important coal, lead, and iron mines; its large cast metal founderies and iron manufactories, potteries, glass-houses, copperas works, coal tar, and salt works, quarries of marble, fire and free-stone, lime, brick, and tile kilns, grind-stone and mill-stone, linen and woollen manufactories, trade, agriculture, and population, consuming all its own vegetable productions within itself, or more, which clearly evinces the policy and necessity of causing all the large and valuable commons therein to be inclosed, together with the total abolition of all common fields and inter-commons, upon the proprietors thereof making a proper compensation.

A most stupendous iron bridge, of one arch, is now erecting over the river Weare, between Sunderland and Bishop-Wearmouth, principally under the patronage of the county and city members, which, for its amazing altitude and span, will exceed any thing of the kind in the known world, and must be the wonder and admiration of ages.

Its height will be 100 feet, and span 230 feet clear.

COAL TAR AND PITCH.

THESE two important and invaluable articles for the paying of ships bottoms, are an infallible preservative against those destructive animalculæ, the sea worms, and this county appears to be peculiarly adapted for its manufacture to any extent required. Both coal tar and pitch, I understand, were made fifty years ago by the ancestors of Mr. George Dixon, a coal owner in this county, and also by himself, during the American war, in large quantities, and sent to Newcastle, Sunderland, &c. but for some reason or other he has discontinued the business, owing, perhaps, to the heavy expence of land carriage. I am informed, that at the time they were first invented, a vessel was actually payed therewith, and sent under the directions of Government to the West-Indies, by way of experiment, which returned perfectly sound and clean as when it was sent out, and which every vessel payed with such *genuine coal tar* wi ever infallibly do; but certain it is, proper attention and encouragement had not then been, and, I am afraid, is not ye given to their production and application, otherwise the must have ere now been generally used, to great private an public advantage, independent of their being great interna commercial articles.

There are many processes for making the above-mentioned articles, prior to that for which Lord Dundonald obtaine a Patent, and parliamentary extension. Some of them ar so productive, (owing perhaps to the coal containing mucl bitumen) as to require only 4½ ton of coal to a barrel o tar. Several manufactories for making them have bee erected in this county lately; but such establishments ough only to be made contiguous to coal pits communicating witl a navigable river, in order to avoid the heavy expence o land-carriage, and none but the most bituminous coal applie to these purposes; even the smallest of such coal, which i scarcely vendible by the coal-owner, is the properest, an two ton of some will produce a barrel of tar. I have trie various pieces of coal, both of my own and other owners and find some amazingly productive, particularly one o Mr. Lambton's (the greatest proprietor and owner upon th river Weare) in so great a degree, that one-fourth part o a single stratum in one of his coal pits, if made into ta would be much more lucrative than the whole produce o such pit, great as the profit of such mines is known t be; on which account, I am certain it would be much th interest of such owners to establish large apparatuses for i manufacture, and highly incumbent upon Government an ship-owners to encourage the general use of such *genui coal tar* ONLY.

The cautionary word ONLY must be carefully and peculiarly attended to by every person who buys and supplies the invaluable articles, particularly to the above-mentioned pu

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pose, or indeed to any other exposed to air or water, as it is usual for the manufacturer (though highly impolitic and unjust, and arising either from ignorance or avarice) to extract the essential oil thereout, which is absolutely essential or necessary to their efficient application, renders the residuum a mere *caput mortuum*, by totally depriving them of their adhesive and preserving qualities, and I am afraid, nay I am certain, has much discouraged their consumption, as Mr. Fiott, and many other gentlemen of my acquaintance, in London and elsewhere, have made various complaints to me of their inefficacy, desiring me to inform them (thinking I could and would so do) why in so many instances they failed of success?—I gave them, as I now give the Public, the same serious and concise caution, and there being no apparent difference between the original tar, and that which has undergone the second process, I know of no other security the purchaser can have, but the word and honour of such manufacturer, though I should be inclined to purchase none but of those who made the *original tar only.*

I am also certain, that the liquid arising and produced before the tar comes over, is equally invaluable for the purposes of curing the scab, and many other disorders in all animals, by simply rubbing them therewith, as the ingredient is totally hostile to every species of animalculæ, which, it is well known, are the sole cause of such diseases. The Gentleman, as well as the Farmer, will therefore find his account in its application; but if not to be had in sufficient quantities, (or if too strong it should be reduced with water) I naturally suppose the original tar boiled in water, and such water applied, would answer the same beneficial purposes, at least it might be strong enough to rub sheep with. It certainly would be well worth the while of every farmer to make the experiment, more especially as one or the other will infallibly answer his most sanguine hope, and cost him nothing but his labour, and such persons would do the community a great service, by communicating their effects to the Board of Agriculture and the Public.

Every application of the original tar, or its oil, for sheep, without their being well qualified with grease, should be carefully avoided; perhaps the same caution may not be necessary for larger animals.

Why Government, the Board of Admiralty, and the East India Company, will not encourage its general use, notwithstanding the numerous proofs given, and the reiterated representations made to them all by Lord Dundonald, myself, and many respectable persons, the Reader must form his own conjecture, for it is undoubtedly a hundred times more valuable for the above-mentioned purpose, and many others, than any foreign vegetable tar whatever. * And though this is a subject more connected with Commerce than

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* In order to elucidate their beneficial effects more fully, relative to shipping, I will take the liberty to report two or three curious anecdotes that occurred, before Lord Dundonald's process was known.

Being once in company with Captain Take, of a Jamaica packet, I mentioned my having made some experiments upon Coal Tar, and stating to him the infinite advantage and security the Navy would derive therefrom, if used by it, he replied, " Sir, I can give you and the Public stronger proofs of its infallible good effects than any man in this kingdom." He informed me that Mr. Campion, a capital Tar-maker in Bristol, had desired him to take out two planks done with coal and foreign tar, and caused them to be sunk in Port Royal harbour for two months, which when drawn out, it was found that the first mentioned was as clean and sound as when immersed, and the latter a complete riddle.

One morning I called upon my friends, Messrs. Twiss and Jennour, agents to the East-India Company, when the conversation turned upon the singular virtues aud efficacy of Coal Tar, and the great benefit the Company would derive foom its use, and save the immense expence they were at in coppering their large ships. They were so fully convinced by the than Agriculture, yet it is well entitled to the consideration of the Board, in consequence of its probable utility in curing the disorders of sheep, and in the benefit that would result, from applying it as a paint, for implements of husbandry.

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the irrefragable proofs given them, that they earnestly entreated I would wait upon Mr. Oliver, Secretary to the Company, and make the like important representation to him, who would undoubtedly make a report of it to the Court of Directors. Accordingly I waited upon him the next morning, and in the course of our conversation, he ordered a piece of the wreck of an East-Indiaman to be brought for my inspection (which is well worth every curious person's seeing, more especially those concerned in shipping) when I said, "This specimen of the destructive and dangerous effects of the Sea Worm speaks more than a thousand tongues can express."—He then proceeded to inform me that it was part of the bottom of an East-India ship just arrived, most luckily, at a crisis when it had many feet water in its hold, and 400,000l. cargo on board, and when examined to know the cause, was actually found to be totally eaten through in an hundred places, and many of them, I am certain, above an inch in diameter. "Now, Sir," I replied, "if this vessel had been well payed with genuine Coal Tar, no such accident could have happened, for such application is infallible in its effects, in all climates and seas."

At that time I found Mr. Oliver had never been informed of its consequence, and deeming such information of much importance to the Company's interest, he desired I would wait upon the then Chairman, and communicate it to him. Next morning I had an interview with the Chairman, told him who I was sent by, reciting every particular before mentioned, and the specimen I had seen, as a most corroborating argument in favour of what I advanced: when with great composure he told me it was of no importance to the Company, *for—they—only—hired—their—ships.*—— "Would it do (said he) for—Ropes?"——I replied, "Sir, I came to tell you, as a favour, what it will do for, not what perhaps it may not do for."

A worthy respectable friend of mine, Mr. Thomas Richardson of Sunderland, informed me, a few weeks since, that he had gone on purpose very lately to examine a large ship that had been well payed with coal tar, and sent to the West-Indies, and after her return into the Baltic for some months, when he found her bottom, and every other part, perfectly sound and clean, and not so much as a single barnacle upon it.

LEAD MINES.

THE principal lead mines in the county of Durham, are in the parish of Middleton in Teasdale, and the parish of Stanhope in Wearedale; the greatest part of those in Teasdale are the property of the Earl of Darlington, and the other the property of Timothy Hutchinson, Esq.

The mines in Teasdale are at present rather unsuccessful, and the unsettled state of the times is much against mine adventurers, as the sale of lead is generally very dull during war, which prevents the mining business being pursued with the usual vigour.

The principal mines in Wearedale are the property of the Bishop of Durham, and some of them are very successful at present. There are likewise some others belonging to various proprietors, but none of them are of much note.

The general method of working the mines in this county is nearly the same as in the neighbouring counties of Cumberland and Northumberland. Great improvements have, of late years, been made by introducing waggon levels, which at the same time that they unwater the mines, take off the most laborious part of manual labour, and, in both these respects, save the adventurers a considerable expence. The method of smelting the lead ore, in Wearedale, is by the blast hearth as formerly, but in Teasdale the air furnaces have been lately introduced, and when properly conducted answer well, so that in all probability they will be the only method that in a little time will be practised.

The method of refining in this county, is the same as practised in all the principal works in the before-mentioned places; but to enter into every particular of the process of smelting and refining, would far exceed the limits allowed to this paper, perhaps unnecessary too; for, from any description that can be given to the honourable Board of Agriculture, or to the Public, no just idea could be formed, unless they saw the constructions of the smelting and refining mills, and had an opportunity of viewing the whole operation performed.

The increase of population, occasioned by the mines in both these extensive parishes, is very great; and the landed property, could by no means support one third of the inhabitants, were it not for these mines, as the land in general in their neighbourhood, is of a very bad quality, and consequently of very little value to a farmer; besides, they do more than double the rent of all the small farms contiguous thereto, as the miners take these farms at extravagant rents, for the convenience of keeping two or three cows and a Galloway, for the use of their numerous families.

They likewise make a very considerable difference in all the farms at a great distance, as the farmer is always certain of a ready market for every article his farm produces, and at the best prices.

As to the value of land generally broken up by the working the mines, it is said to be of little or no apparent consequence, being chiefly either heath or peat moss, and, on that account, deemed by the inhabitants, incapable of any kind of improvement.

SALT SPRINGS, AND SALT WORKS NEAR THE RIVER WEARE.

THERE is a very singular salt spring at Birtley in this county, and one of the great arcana of nature, which, like many more, will never be explored by man, and displays the wonderful works of the Omnipotent in an eminent degree. —It arises at the depth of seventy fathoms, in an engine pit erected for drawing water out of coal mines, at the extremity of a stone drift, drove 200 yards north-east therein, for the purpose of draining the water from the coal works, and what is more extraordinary, springs only in such drift in every direction, though such pit, and every other contiguous thereto, have been excavated both above and below it many fathoms, where, and when it might naturally be supposed the same spring would have been found. Its mixing itself with the fresh water in the same pit, would have occasioned its remaining totally unnoticed to this day, but for an accident which happened to the boiler of the engine soon after its erection. One morning the bottom of the boiler suddenly dropt out; the engine man amazed thereat, as well he might, informed the undertakers, who upon examination found it incrusted with a vast quantity of strong salt, and the iron totally corroded. Upon tasting the water, though incorporated with immense quantities of fresh, it was found exceedly brackish and salt, whereupon they explored the workings, and found the above-mentioned very valuable salt spring arise in such drift only, and which has for these nine years produced, and may for eternity produce, 20,000 gallons per day, four times stronger than any sea water whatever, therefore it can have no communication with the sea.

In consequence of which valuable discovery, a large and extensive manufactory of salt has been established by a company of gentlemen, who, after encountering many difficulties, as are usual at first in great speculative undertakings, have brought it to very great perfection, of a most excellent quality, and send it to most parts of the kingdom. There is a very considerable quantity of a strong saline residuum, called bittern, to the amount of 2000 gallons per day; which at present is of no use to the manufactory. It will therefore be a very necessary enquiry, whether it could not be used as manure in agricultural improvements. No experiments have as yet been made of it, but at the personal request of the President of the Board of Agriculture, the manufacturers promise to try various experiments therewith, and in proper time to make their report to the Board. With the brine itself no experiment can be tried, in consequence of the 18 Geo. II.

cap. 18. sect. 17. by which any person who shall carry any brine from the salt pits, (other than the known proprietors of pans for boiling it into white salt) shall forfeit forty shillings per gallon.

There is another very curious salt spring at Butterby near this city, that rises out of a rock in the river Weare, and is only visible and visitable at very low water. A small excavated bason has been made therein, perhaps many centuries ago, but its production is so trifling, though equally as strong as that of Birtley, that the proprietors have never thought it an object worth attending to, nor perhaps never will, for the reasons given.

Several great works for making salt from sea water, have long been established at South Shields; but it is supposed their consumption has been much reduced by that at Birtley, and I am given to understand, that neither sea water nor any salt spring in this kingdom, contain any great quantities of bittern, which, if it is found to be of any benefit to agriculture, it is to be hoped the legislature will take off every restriction upon its use, as also that upon foul salt, which is known to be so efficacious as a manure.

In the History of the Public Revenue of the British Empire, vol. 2. p. 137, there is a short statement of the objections, known at that time, to the impolitic tax on salt; but from some late discoveries it would appear, that the duty on salt is attended with another disadvantage of considerable moment, for it is now ascertained, that salt twice chrystallized, is divested of all its impurities, and then becomes peculiarly well calculated for the table, or for preserving meat, fish, butter, &c. Twice chrystallization, however, is a process which can hardly become very general, except in this kingdom. The French, Spaniards, and Portuguese, can never think of redissolving their Bay salt for that purpose, and the Dutch can never do it to the same advantage, on account of the higher price of fuel in Holland. If therefore the tax on salt were abolished, it would give to Great Britain, not only the total command of the commerce of salt, but also a great superiority in regard to all the articles in which its use is necessary. There are no means, by which the same sum could be raised, in a manner that could be productive of half so many pernicious effects to the public in general; and the abolition of this tax, it can be hardly be doubted, is, both in a commercial and agricultural view, one of the objects, the most devoutly to be wished for, by every friend to the interests of the country.

On the subject of twice chrystallization, and the nature of the Birtley salt springs, a respectable chemist has very obligingly communicated the following observations.

The Dutch mode of making *salt upon salt*, is to redissolve in sea water the salt that has been once chrystallized, letting the solution stand to become clear. It is then poured into the salt pans, evaporated, and chrystallized over again.

Sea water contains one ounce of sea salt in from thirty-six to forty ounces of the water, according to the part of the sea from whence taken; and there is also in this quantity about half a drachm or thirty grains of gypsum, of magnesia muriata and magnesia vitriolata together, half an ounce, besides a small portion of mucilaginous matter.

Sea salt requires three times its weight of water to dissolve it, of course something more than that proportion of sea water. The salt dissolved in three times its weight of sea water, when formed by a second chrystallization, is more likely to contain some portion of the earthy salts, than if pure water had been employed. To obtain it pure, therefore, by a second chrystallization, *the produce of the first should be redissolved in three times its weight of river or rain water, or water from a spring free from saline substances.* This solution should stand until perfectly clear, the clear part then be drawn off, and evaporated in salt pans with a degree of heat just sufficient to make it simmer. When sufficiently evaporated the solution should be put into shallow vessels, exposed to the air, but covered from rain.

There is also every reason to believe, from some late chymical discoveries, that an article might be manufactured from the brine at the Birtley salt works, and indeed from common salt water itself, superior in quality to Spanish barilla, and which can be afforded at a cheaper rate. This is an object of very great magnitude, the experiments necessary for ascertaining which will be tried without delay. If they answer, it would be a strong additional argument for the abolition of the salt tax.

It would appear from the experiment tried by the proprietors of the Birtley salt works, that the bittern at their works principally consists of calx muriatum, quick lime combined with muriatic acid. In any case, it can only be employed as a manure, in very small quantities. To a soil that is barren and without manure, it would prove an absolute poison. It would forward the putrefaction of the manure in a manured soil, would stimulate the vessels of plants, and therefore is to be considered as a forcing manure, which can only be employed with advantage in a rich soil, or on ground well manured. Two gallons of it, however, mixed with from five to ten gallons of water, sprinkled over a dunghill, might be of considerable use in accelerating putrefaction.

THE TURNPIKE ROAD, FROM THE BOTTOM OF THE LONG BANK, TO NEWCASTLE.

THE President of the Board, having done me the honour to request, I would, as soon as possible, take an accurate survey of the ground on the west side of the Long Bank, and make a report to him, whether a much more convenient, eligible, safe, and level road could not be obtained, and the whole of the present hilly, dangerous, and expensive one avoided. Accordingly I have, in company with Mr. Vazey of Pelaw, so done, and am clearly of opinion with him, that a much more convenient, safe, level, expeditious, and elegant road, comprehending perhaps the most beautiful prospects in this kingdom, all the way to Newcastle, may, with great ease be accomplished, at a trifling expence, considering what general advantages would be derived, and that too, I should hope, without any additional public impost; but which, if necessary, I am fully convinced every person who travels the present very offensive one, would readily comply with, and be considerable gainers; for, in the first place I will venture to assert, that any one, either on horse-back or in a carriage, should perform their journey to that town, in less time than is required to mount the top of the hills; and secondly, that the expence of one horse in three would be saved thereby, in every heavy carriage, and the work performed with more ease.

What could induce the first Commissioners, to direct th present road over such a dreary, dangerous, and hilly common, and thereby increasing instead of diminishing the distance, I am at a loss to conceive; for it is evident to every traveller, that the original road to Newcastle, and yet existing, whereby such stupenduous hills were totally avoided, was a hundred times more eligible and convenient. But in case any alteration is made in the present one, in consequence of thi inquiry, I would take the liberty to submit to the Commissioners of the said road, their directing proper persons t survey, whether it would not be much more eligible and convenient, to commence it at or near the Three Tons, when i would be found to go in a direct level line to Newcastle, thoug at a small expence more. I understand it will be necessary fo the Commissioners of the present road, to apply to Parliamen the next sessions for fresh powers; then would be the time, presume, to agitate and effect this very desirable and generall wished for alteration, which could not possibly, with prope

managemen

management, cost more than about 3000l. And as I am well informed, the income of the present toll amounts to 1,100l. per annum, or more, I should conclude there must remain a very considerable surplus, after deducting every expence of interest and repairs, that would enable the Commissioners, to borrow the sum needful, to execute such a laudable and necessary undertaking at the time mentioned, if the honourable Board do not think proper to take the business up sooner, for too soon it cannot be done.

CONCLUSION.

SUCH are the observations which have occurred to me, respecting several particulars, connected, if not with the agricultural state, at least with *the internal improvement* of the kingdom, and consequently within the scope of the researches of that Board to whom this paper is addressed. I thought it my duty to submit them to the consideration of the members of that respectable institution, without meaning to interfere with the agricultural survey of the county of Durham, or its very ingenious and competent author. I shall only add, that when the Sovereign of a powerful and extensive empire, thus patronizes the most laudable and beneficial undertaking ever attempted, and thereby acts, as our most gracious Monarch always has done, the part of a true and affectionate parent of his people, what has not a kingdom to hope for from such an establishment. By the spirited and patriotic exertions of a Board, thus constituted under the auspices, indeed, both of the Crown and Parliament, such singular services, we trust, will be rendered to the country, as will raise it to the highest pitch of opulence and power, and immortalize those by whom it was planned and supported.

POSTSCRIPT.

REGARDING SALT SPRINGS, &c.

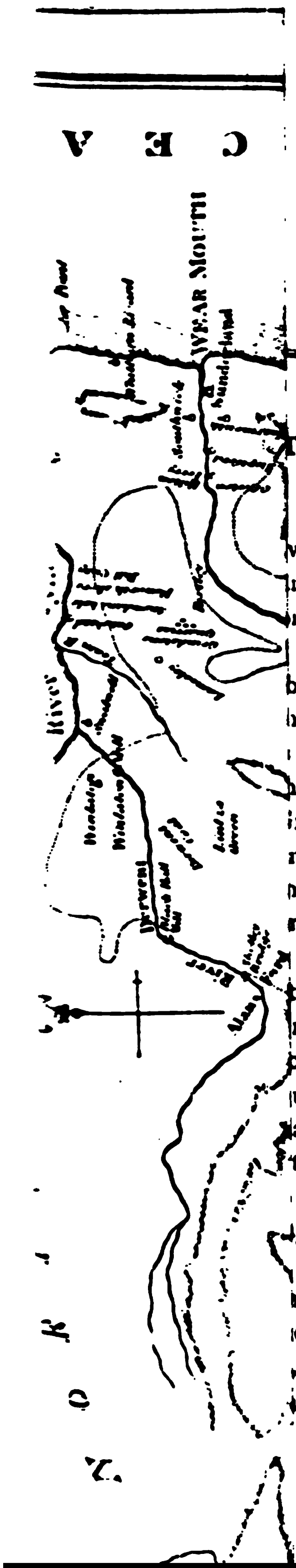
THERE are probably many valuable salt springs all o England, in places where they are little thought of.—T best mode of trying whether they are alkaline or not, is take a common wine glass of the clear water, and to drop it two or three drops of olive oil. If it becomes milky, is a proof of the existence of alkaline particles.

Respecting the manufacturing of the muriat of pota either from salt springs, or sea-water, the following pla recommended.

1. Chrystallize the brine as usual, to separate the bitt which will not chrystallize.

2. Ascertain *exactly* the quantity of muriatic acid conta ed in the salt, which may be done by any real chymist, means of nitrat of silver. A pound of the salt is suffic for that purpose.

3. A certain quantity of the salt is then dissolved, an mixed with as much potash as will be necessary to satu that acid, after which the whole is evaporated and expo to chrystallization, by means of which the muriat of po is separated, as the soda chrystallizes last.



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to be 1 deg. 15 min. west. The eastern side of the triangle extends from the mouth of the Tees, in its northern direction, inclining a little eastward, to the peninsula of Hartlepool, which is the most eastern point of the coast of this county, and so far the shore is low, and covered with a firm sand, excepting that about the mid-way, a rock called the Long Scar projects from the town of Seaton, about a mile into the sea, and is covered at high-water; and from the peninsula of Hartlepool, it proceeds northward, declining a little to the west, to the mouth of the Weare at Sunderland; and from thence round Suter-Point, which projects a little eastward, to the mouth of the Tyne at Shields, being for the most part fronted with cliffs of unequal height, in some parts of which, as at Hartlepool, Black-Halls, and Whitburn-Lizard, there are caverns of considerable size, with various openings and perforations, and through them pleasing views upon the sea; and in some parts of this range of coast, as at Hartlepool, Dalton-field-House, and Whitburn-Lizard, there are rocks of huge bulk, and various shapes, standing detached from the cliff, and at high water surrounded by the sea; these, in the early months of summer, are covered with innumerable flocks of sea-fowls, and wonderfully picturesque.

From Shields, the river Tyne forms the northern boundary of this county, up to a brook which falls into it opposite to Wylam, in Northumberland, and from thence the boundary line between the counties of Durham and Northumberland takes, by an irregular course, (part of it being up the channel of the river Derwent) a south west direction, till it reaches the northern Appenine at Kilhope-Cross, the point of union of the counties of Northumberland, Cumberland, and Durham; and from thence proceeds abutting upon Cumberland, about seven miles, in a more southern direction, to the mouth of Crook-burn before mentioned; and from thence the river Tees flowing south eastward, divides, for about four miles, the county of Durham from Westmoreland, to Caldron Snout, the point of union of Westmoreland, Yorkshire, and Durham, and at the distance of five miles, having tumbled down a precipice of sixty-nine feet perpendicular, in a most noble and beautiful cascade, which is called the High Force, it pursues its course to the sea, forming the southern boundary of this county.

ASPECT.

THE general aspect of this county is hilly, and naked, but not a little enlivened by the comfortable view of farm houses standing in the midst of the farms. Cross-Fell, although situated beyond the western limit of this county, may, it is presumed, with propriety enough be called the *natural* head of it, for, from the eastern side of that mountain issue the sources of the river Tees, and take an eastern course, accompanied on the north by a lofty ridge, from the north side of which issue the sources of South Tyne, and take a northern course; the ridge then bends to the north, and forms the western limit of this county to Kilhope-Cross. From the eastern side of this lofty ridge, and from those of the mountainous ridges which branch eastward from it, issues the Weare, and other brooks, or rivers, that take their courses, with some rapidity for the most part, eastward to the sea; and from those mountains other ranges of hills branching off, and still decreasing in height as they approach the sea-coast, spread themselves in various directions over the whole county.

SOIL.

NEAR the river Tees, the soil is loamy, or rich clay; as it is likewise in some spots near the other rivers and brooks in this county: at a further distance from these rivers and brooks, the soil is of a poorer nature, commonly called *water-shaken*, with here and there spots of gravel interspersed; but these are of small extent, the middle of none of them being half a mile from clay: the hills between the sea, and an imaginary line drawn from Bernard-castle on the Tees, to Alan's-ford on the Derwent, are for the most part covered with a dry loam, the fertility of which varies in proportion to its depth; and, but where thinnest, it affords wholesome pasturage for sheep, and from the above-mentioned line westward, the summits as well as the sides, are moorish-wastes, and will come into consideration under the head *wastes and advantages of inclosing*, as will the soil commonly called *water shaken* under that of *drainage*.

CLIMATE.

THE climate is uncertain in all the seasons of the year, insomuch that the cultivator seldom reaps all his crops to such advantage, as from the nature of the soil might be expected, the weather in the spring being either too harsh, or in the beginning of summer too cold and dry, and in the autumn too wet and windy; and the whole face of this county declining from west to east, is exposed to, and annoyed by, the north-east wind, which often prevails long in the spring: one tract only, with the river Skern winding through it, declines to the south, and the fortunate inhabitants are not insensible of the benefit accruing from the warm exposure; for the rest of the county, a few acres here and there, judiciously chosen, well planted and fenced, would soon afford screens sufficient for shelter, and in a few years more, would produce a satisfactory return of profit.

PROPRIETORS.

PROPRIETORS.

A THIRD part of this county is supposed to be of ecclesiastical tenure; of the remainder, part is possessed by great, part by middling, and part by small proprietors.

GRASSES.

THE grasses chiefly cultivated are rye and duffil grass; red, white, and hop clover; and rib and oat grass; but the two latter are justly falling into disrepute. Rib grass, because it has been observed to be no favourite of the stock in the pasture, and when making into hay, it shrivels so much that it slips through the rake, and little of it reaches the stack, more especially when it is of slender growth, from poor land; another mischief from it is, that being productive of seed, it overruns the ground, to the obstruction of better grasses. Oat grass, because it is only an annual, and is found to impoverish the soil. Rye-grass is much esteemed, because it is of earliest growth, continues late in the autumn, and thrives in all soils and climates.

STOCK.

PERMISSION having been obtained from Mr. Culley to insert in this work his accurate description of the horse, bull, and ram of the County of Durham as stated in his Observations on Live Stock, the favour is thankfully acknowledged. It would be too great a trespass on his liberality, to borrow his judicious remarks; they are to be found in his book. A few additional reflections, however, have occurred, and will follow after the descriptions, for consideration. Stock being the peculiar boast of this part of the north of England, it seems a duty to give it that attention which it deserves.

MR. CULLEY'S DESCRIPTION OF THE DURHAM HORSE.

His head should be as small as the proportion of the animal will admit; his nostrils expanded, and muzzle fine; his eyes chearful and prominent; his ears small, upright, and placed near together; his neck, rising out of his back and shoulders, with an easy tapering curve, must join gracefully to the head; his shoulders being well thrown back, must also go into his neck (at what is called the points) unperceived, which perhaps facilitates the going much more than the narrow shoulder, which most people are admirers of; for whoever has observed a grey-hound, or a hare, will perceive how very wide they are made at the upper part of the shoulders, and there are few animals that move with so much ease and swiftness as they do. The arm or fore thigh should be muscular, and tapering from the shoulder meet with a fine straight sinewy boney leg; the hoof circular, and wide at the heel; his chest deep, and full at the girth; his loin or fillets broad and straight, and ribs round; his hips or hooks by no means wide, but quarters long, and tail set high on; his thighs strong and muscular; his legs clean, and fine boned, the leg bones not round, but what is called lathy.

MR. CULLEY'S DESCRIPTION OF THE TEES-WATER BULL.

The head of the bull should be rather long, his muzzle fine, and nostrils wide; his eyes lively and prominent, his ears long and thin, his horns white, his neck strong, and rising rather from the shoulders, but small and fine where it joins the head; his shoulders broad at the top, yet to sit full to his crops, and chest backwards, and to his neck vein-putt or mouse-piece forwards; his bosom open, breast deep, broad, and well seen before his legs; his arms or fore-thighs full, and tapering to his knee; his legs straight, clean, and very fine boned, with good large hoofs; his crops and chest so full as to leave no hollow behind the shoulders, and so strong in the plates as to keep his belly from sinking below the level of his breast; his back or loin broad, straight, and flat; ribs well up as the graziers term it, viz. one rising above another, in such a manner, as the last rib should be rather the highest, which should leave only a small space to the hips or hooks; these should be wide placed, round and full in shape; the quarters long, tail high, rumps close, and the quarters, instead of being square as recommended by some writers on husbandry, should taper gradually from the hips backward, the turls or pot-bones quite sunk, and in every respect different from the round, lyery, or Dutch form, so undeservedly esteemed formerly. The form here described, will, when fed, be covered with fat to the hock, or hough. The bones of his hind legs same as those before, viz. clean, small, and straight; tail broad and well haired.

MR. CULLEY'S DESCRIPTION OF THE TEES-WATER RAM.

His head should be fine and small, his face white, nostrils wide and expanded, his eyes prominent, and rather bold or daring; ears short and thin, his collar full from his breast and shoulders, but tapering gradually all the way to where the head and neck join, which must be very fine and graceful, being perfectly free from any coarse leather hanging down; the shoulders broad, and full, which must at the same time join so easy to the collar forward, and crops backward, as to leave not the least hollow in either place, the mutton upon his arm, or fore-thigh, must come quite to the knee; all his legs white, and upright, with a clean fine bone, being equally clear from superfluous skin and coarse hairy wool, from the knee and hough downwards; the breast broad and well forward, which will keep his fore legs at a proper wideness; his girth or chest full and deep, and instead of a hollow behind the shoulders, that part, by some called the fore flank, should be quite full, the back and loins broad, flat, and straight, from which the ribs must rise with a fine circular arch; his belly straight, the tail well set up, quarters long and full, with mutton quite down to the hough, which should stand neither in nor out; his twist deep and full, which, with the broad breast, will keep his fore legs open and square; the whole body covered with a fine thin rosy pelt, and that with a fine long, bright, soft wool.

Such being the models of our stock, the horses are fit for the field, the saddle, and the harness, and sold at good prices to the London dealers: it is thought, however, that the breed for the draught, may be improved by a cross with the mouldy, active, Derbyshire breed. The cattle are short horned, of a good kind, still improving, by the attention of some breeders to a judicious selection of bulls and cows; and perhaps upon every consideration of form, weight, produce of milk and butter, and above all, quickness of grazing, not inferior to any in England. Different opinions have been advanced relative to distinctive signs in cattle of their being suitable, or likely, to prove profitable for the dairy or the shambles; but amongst the best judges, no general rule is yet received, or admitted to be certain, upon this subject. Cows, with all the signs upon the udder of being good milkers, are frequently found to make fat as quickly, as those which have not any such signs; the sheep are large, with long wool. They have of late been crossed by some, with the Leicestershire kind, and several think with advantage; others are of opinion that the cross hath been disadvantageous, because, although it must be allowed that the form has been improved, the weight certainly hath been found to be diminished; and that in those of the age of a year and a half, the usual time of sale, diminishes the value, perhaps not less than a crown per head; nor hath the pasture admitted of a greater number, nor have they fattened sooner to compensate that loss; nor hath it been found, that by keeping them longer, a greater increase of profit hath accrued from them than from the other. They wish therefore to preserve the old, which hath acquired the name of the Tees-water breed, and hath been long most deservedly in high esteem; and they recommend, in order still to improve it, a careful attention in the choice of ewes and rams in the propagation. In Weardale, where the sheep is of a small kind, weighing, when fat, from fourteen to eighteen pounds a quarter, part horned, with mottled faces, the wool fine, care is taken to preserve the breed pure; the ewes are constantly, in breeding time, brought off the moors, and put to approved rams, in their inclosed pastures. Those that run at large upon other wastes, are a promiscuous kind, and in a perpetual state of degeneracy. It is usual for our farmers of water shaken-ground, in the lower parts of the county, to purchase, from the north-western moors, ewes in the latter end of harvest, and putting them to rams of the Tees-water breed, to sell them with their produce the summer following, it not being safe, on account of the rot, to keep them longer.

There is reason for caution, in the introduction of new breeds, where the breeds are already good. A breed of swine brought from Germany, of a round form, and pleasing appearance spotted black, red, and white, tempted many to propagate them; and yet by experience they have been found unprofitable, because they require a greater proportion of food, than our old breed, to fatten them, and when fat, are deficient in the weight that might have been expected from their bulk; the cause of which may, perhaps, be ascribed to a great quantity of woolly hair growing amongst their bristles, and draining, perhaps for its support, the nourishment which should have been distributed in the flesh: and the old breed thinly covered with bristles only, which had been nearly lost, is coming again into general request. Nor may it be amiss to insert another reflection upon a matter of much greater importance, which arises on the occasion, merely as a caution in futur and not by any means as a reproach to the present generatio for which no cause is given, viz. that although, perhap there may be in this part of the kingdom some favourabl peculiarity of soil or climate, we have also traditional assurance; that our ancestors were careful in the selection of th animals from which they bred, in the several kinds of stock to which attention, the pre-eminence of character it sti bears in the market, is perhaps principally to be attributed and therefore, when the measures now upon the anvil, t promote improvements, are likely enough to raise universa emulation, it surely will behove us, not to relax from following the good example they set us, but rather to redouble ou care and ardour to preserve the pre-eminence we have inherited.

GRAINS.

WHEAT, barley, oats, beans, and pease, are the grain chiefly sown; in the western part, beans are not sown, th soil not being fit.

ROTATION AND VALUE OF CROPS.

THE present usual rotation of crops is, after summer fallow, wheat, oats, or beans, or pease, and sometimes a crop o broad clover is taken in lieu of oats, beans, or pease: in som spots of gravelly soil, which are rare, there are turnips an barley in perpetual succession, with now and then a crop o clover interposed. In a county consisting of such variety o land, the value of crops is found proportionably various there are acres of meadow ground which sometimes produc two tons of hay per acre, but in general the produce is belo half a ton. The medium price is about three pounds a to Of wheat upon good land, the produce may be estimat

fro

from twenty to thirty bushels per acre; upon the inferior land, from ten to twenty bushels per acre; the average price, from five shillings to five shillings and sixpence per Winchester bushel. Of barley, never attempted but upon dry ground, inclined to gravel or sand, from thirty to forty bushels; average price, from three shillings to three shillings and sixpence. Of oats, from twenty to forty bushels per acre; average price, two shillings and sixpence per bushel. Of beans, from fourteen to twenty bushels per acre; average price, four shillings and sixpence per bushel. Of pease, from eight to twelve bushels per acre; average price, three shillings and sixpence per bushel. Of wheat straw, twelve thrave per acre; average price, one shilling and sixpence per thrave, Turnips for feeding sheep on the ground, from two pounds to five pounds per acre.

FALLOWING.

IT must be allowed, that land fit for the turnip husbandry, is best employed in the rotation of crops, as now usually practised; but of this sort there is but a small portion in this county, as hath appeared by what has been said above under the head of *soil*. In general, a clean summer fallowing every third year, has been thought necessary to keep our poor spungy soil free from weeds, to which it is most prone. However, to obtain this end without fallowing, experiments have been tried by the use of the drill, and are continued not without hope of success.

SIZE AND MANAGEMENT OF FARMS.

THE farms are generally of a midling size, few exceeding 200l. annual rent. Part of each farm is in tillage, part in grass; frequently too much of the former. Towards the western extremity of the county, the whole is in grass. Of those

ENTY-ONE YEARS.

1808	1809	1810	1811	1812	1813
Grass	Grass	Oats	Rape	Wheat	Clover
Grass	Oats	Rape	Wheat	Clover	Fallow
Oats	Rape	Wheat	Clover	Fallow	Wheat
Rape	Wheat	Clover	Fallow	Wheat	Grass
Grass	Grass	Grass	Grass	Grass	Grass
Grass	Grass	Grass	Grass	Grass	Grass
Hop and Vhite Clover and Rye Grass	Grass	Grass	Grass	Grass	Grass
Wheat	Hop and White Clover and Rye Grass	Grass	Grass	Grass	Grass
Grass	Grass	Grass	Grass	Grass	Grass

uld be in grass, and the other two third parts, turnips

MANURES.

THE produce of the fold yard and lime, with the farmers in general, are the only manures used. In situations near the coast, abundance of sea weed may be collected, which, with a mixture of sand, would be valuable manure for their clayey land, but which is not sufficiently attended to, perhaps principally owing to the exact quantum for improvement not being accurately ascertained. It is to be lamented, indeed, that farmers in general are unacquainted with the benefits arising from mixing and incorporating manures. Near to towns it is better understood; and it is remarked, that the manure produced in towns, where sea sand is used to lay on the floors of houses, is infinitely more valuable than any other common manures. To this perhaps the mixture of various sorts of manure upon dunghills, found near such towns, may also in a great degree contribute.

IMPLEMENTS OF HUSBANDRY.

THE Rotheram plough, harrows, and rollers. Carts with two wheels, containing about twenty four bushels, or one ton weight, drawn by three horses, and used for the purposes of leading coal, lime, dung, &c. Long carts of a good form, with two wheels also, and drawn by three horses, used for leading hay, and corn in the sheaf. Few waggons with four wheels used. Thrashing machines are lately introduced. Sowing machines, or the drill husbandry, are come into frequent use: one hath been lately invented by Mr. Christopher Perkins, of Stockton, which is much approved. Mr Perkins has also invented a harrow for gathering couch-grass, well constructed for that purpose, and by a peculiar contrivance, the harrows being taken from the shafts, hoes are affixed, which clean the ground in the intervals between the rows of corn sown by the drill. The price of the drill machine is

5l. 15s. 6d. and the apparatus for harrowing and hoeing four
guineas.

TEAM.

Horses only for the most part are employed in the team
in some situations oxen would perform the work better, es
pecially upon our steep declivities, and are fed at a low
rate in winter, upon straw alone; except that occasionall
upon hard work, a sheaf of oats is given them once in t
day, and in case an accident should render them unfit f
labour, or the state of the farmer's stock should make it pr
per to sell them, they will sell to profit; whereas the hors
after having required a greater expence in keeping, in case
accidents, to which he is more liable, or of age, will produce
mere nothing.

SEED-TIME AND HARVEST.

The seed time for beans, is the middle of February, or
soon after as the weather permits; oats throughout Marc
barley in April, turnips in June, rape (when sown, whi
is seldom) in August, and wheat from the middle of Se
tember to the end of October, and sometimes later. H
harvest, upon new laid lands, commences soon after Mi
summer, and old meadows generally are cut in July. Co
harvest, adjoining the Tees, the sea, and some of the rive
often begins towards the end of August; in other parts
this county it is a fortnight or three weeks later, and co
monly lasts throughout September; beans throughout C
tober, and sometimes not finished till the middle of N
vember.

INCLOSUR

INCLOSURES.

In this county the lands, or common fields of townships, were for the most part inclosed soon after the Restoration. The size of fields is from five to fifteen, or twenty acres; the hedges quickset: in the western part the divisions are by stone walls. The common fields are few in number, and of small extent: in the western part they are more numerous, but no division of any of them is in agitation, the expence necessary to procure Acts of Parliament being thought too great. Some general law, or process of light expence, for the division of uninclosed lands, is a frequent and a fervent wish, among the proprietors and the most intelligent farmers of this county.

WASTES, AND ADVANTAGES OF INCLOSING.

The waste lands are situated mostly in the western parts of the county, and may, by probable conjecture, amount to 130,000 acres, and being of different qualities, are capable of various improvements; much may be converted into arable, much into pasture, much into woodland; and even of the mosses, it would be found that many might be drained, and the rest not left unuseful for the production of peat. Lime, of an excellent quality, is at hand, and although the frequency of heavy showers in the western parts, may endanger corn by lodging it, &c. yet the culture of rape, turnips, and potatoes, for all which in many parts it is well adapted, would produce immediate profit, and prepare the land for being laid down to permanent grass. Within the last thirty years, large quantities of waste lands in the lower parts of the county have been inclosed, and it is certain, that the resulting advantages, in regard to improvement in quantity and quality of produce, stock, rent, and increase of population, have been, and continue to be very considerable. It is impossible to treat this subject of wastes, without lamenting that in some of the rich parts of the county, particularly in the neighbourhood of the capital of it, large quantities of land should still lie totally deprived of the benefit of cultivation, in commons; and that ancient inclosures, by being subject to the perverse custom of intercommon, be prevented from that degree of fertilization, to which the easy opportunity of procuring manure, in most cases, would certainly soon carry the improvement of them: in their present state, little or no benefit is derived to any person whatsoever, intitled either to common, or intercommon, from the use of them. By an Act of Parliament passed about twenty years ago, for dividing Elvet-Moor, and for extinguishing all right of common, in certain inclosed intercommon lands, it was enacted, that the lands subject to intercommon shall be discharged therefrom, on the proprietors thereof paying an equivalent, to be ascertained by the Commissioners under the said Act. Their adjudications were executed without any difficulty, and with general approbation.

RATES OF WAGES AND LABOUR.

ANNUAL wages of a man servant in husbandry, having meat, drink, washing and lodging, are from 10l. to 14l: of a woman servant in husbandry, from 4l. to 6l. Price of labour by the day, from 1s. to 1s. 6d. and in harvest sometimes, as exigencies may require, it is advanced to 2s. 6d. or upwards. To a woman for common work in the fields, 6d. per day, for weeding corn, and in hay harvest, 8d; and in corn harvest, as exigencies may require, the price rises to 2s. or 2s. 6d. As inconveniencies and losses frequently arise, by disputing and dallying each morning about the rate of wages for the day, perhaps the harvest would be dispatched with more expedition and safety, if wages were settled by the hour, or by the piece; for in that case, delay and waste of time would be detrimental to both parties, and the work, therefore, probably would begin earlier, and continue later.

DRAINAGE.

THE flat grounds near the Tees, which are of considerable extent, are drained by means of wide ditches, commonly called stells: these might be improved by flood-gates placed at their mouths, to exclude the tide, and give passage to the rain water. Upon the other rivers there are flat grounds of less extent, which are drained by open drains of the like sort. In other parts, where springs burst from the sides of hills, endamaging the ground below, oblique cuts are made to intercept the water, and conduits of stone, or bricks, laid along in the bottom of them to convey it to a main conduit, which carries it down the hill. The earth is then thrown in again, and the surface levelled for the purposes of culture. Sometimes in water-shaken grounds, which cover a large portion of this county, under-drains are made, by trenches half filled up with pebble stones, and levelled again with earth; sometimes superficial drains are made with draining ploughs, of various inventions; sometimes, by opening the furrows with a common plough, the wing of the share being generally raised nearly to a perpendicular, which cuts the one side of the furrow in a slope, while the coulter, being bent at a right angle, immediately under the plough beam, to the land side, an inch and an half, and then again to the furrow a little acutely, and descending obliquely to its point, where it meets the perpendicular, cuts the other side of the furrow likewise in a slope, and under proper management turns out a sod six inches deep, four inches and a half broad at the bottom, and six inches broad at the top. The last method is much approved, and cannot be too strongly recommended, for if made sufficiently deep, it not only drains the adjoining vegetable soil, and consequently improves the grasses, but the sods being laid in heaps, when rotted, furnish a supply of mould for future improvements. It may further be observed that upon clayey soils, particularly where spungy, the ridges should not exceed twelve feet in breadth, or so much as a harrow will cover in going up and down; for this being the size, the top of the ridge will not be much affected by drought, or the lower part too much robbed of soil. Dry gravelly soil cannot be too flat. Upon the extensive wastes in the western parts, should they ever be inclosed, draining will be found of infinite utility, and bring into cultivation large tracts of land, that are now mere bogs and morasses.

PARING AND BURNING.

Paring and burning is of ancient use, and continues in practice for lands that have been long in grass, and are grown mossy. The sods are pared thin, and dried; laid together in small heaps, set on fire, and burnt to ashes, which are spread upon the ground, together with two cart loads of lime upon each acre, and ploughed in. This practice has been found to have the best effect, when the old benty grass, or moss of the sod, are consumed by the fire, and the earth left unburnt; but too generally the earth is burnt along with the grass, or moss, to red ashes, and thereby the fertilizing power of so much earth is destroyed. The season most proper for this operation is May, or the beginning of June. If the soil be good and dry, it is sown with turnips; if poor and spungy, with rape; after turnips, mesling; after rape, wheat, both succeeded by oats; after oats, fallow; then according to the nature of the land, if dry, mesling; if wet, wheat, and sown down to grass, with four pounds of red, and the like quantity of white clover, together with one bushel of rye grass, to each acre. Should the extensive wastes in the western parts ever be inclosed, paring, burning, and draining, must be the first steps taken to fit them for the purposes of culture. The iron plate of which the paring spade is made, is somewhat thicker than a shilling, ground sharp at the edge, towards the socket; for the sake of strength, it is gradually thickened to nearly a quarter of an inch. The price of labour in this kind, varies according to the easiness or difficulty of the ground, from 8s. to 1l. 1s. per acre, the labourer expecting to earn 3s. or 3s. 6d. per day.

WOODS.

In this county, the banks of the rivers and brooks, in some places, particularly in the neighbourhood of Durham, are fringed with wood of considerable growth and value; removed from thence, the face of the country is for the most part naked; little wood, except about the seats of some noblemen and gentlemen, appearing: upon the lands of ecclesiastical tenure none; for who will plant a tree, which the moment it takes root will be no longer his property? In an Act of Parliament, obtained in the year 1773, for dividing and inclosing certain moors, commons, or tracts of waste land, containing upwards of eighteen thousand acres, within the parish and manor of Lanchester, in this county, is the following clause: "And whereas the several copyhold and customary tenants, within the manor of Lanchester aforesaid, are not intitled to take or dispose of any wood or timber growing on their respective copyhold or customary tenements there, (save for the use of such tenements only) without first compounding for the same, with the Lord Bishop of Durham, Lord of the said manor, and obtaining a licence from him, or his steward, for that purpose; which customs tend to discourage the growth of timber: Be it therefore enacted, that the owners and proprietors of the several lands, to be allotted to them respectively, for or in respect of their several copyhold or customary messuages, mills, lands, or tenements, and also the said George Clavering,

vering, and the lessee or lessees for the time being, of the said several houses, buildings, lands, fields, closes, and parcels of ground herein before mentiond, to have been granted by the said Lord Bishop to the said George Clavering, by lease, for the term of three lives, and the life of the longest liver of them, as is hereinbefore mentioned, shall and may, at all times hereafter, fully, and freely, and peaceably, and quietly, have, hold, and enjoy, to, and for their respective uses and behoofs, and sell and dispose of the whole of such woods, underwoods, and trees, and other plantings as are now growing, or standing, or as they shall respectively hereafter plant, or set, or shall grow, in or upon their same copyhold or customary allotments; and the said leasehold premises respectively, any custom or right heretofore used or enjoyed by the said Lord Bishop of Durham, or any of his predecessors, or which might be used or enjoyed by him or any of his successors, to the contrary thereof in anywise notwithstanding."

In consequence of this clause, some thousands of acres of new copyhold and leasehold inclosures have been covered with trees, which are thriving wonderfully on ground utterly incapable of any other improvement. Such were the two hundred and twenty-seven acres, three roods, and twenty-four perches, part of Lanchester Common, freehold and tithe free, which were bought by Mr. White of Retford, in Nottinghamshire, for two hundred and sixty pounds; and other three hundred acres, part of the said common adjoining thereto, also freehold and tithe free, which, together with buildings that had been erected thereon, at the cost of near four hundred pounds, had been ordered by Act of Parliament to be sold to the best bidder, were also bought by the same gentleman, for the payment of two shillings an acre annually, for ever, to be applied to purposes directed in the Act; and Mr. White's example has been followed by many others, whose young woods promise equal success.

It hath been much wished, that something similar might be contrived to promote the growth of wood upon all lands of ecclesiastical tenure. In Dr. Anderson's judicious reflections upon the plan of a lease invented by the late Lord Kaims, hereafter quoted in this work, from his View of the State of Agriculture in the County of Aberdeen, there is a clause relative to wood proposed to be added, which, if adopted into ecclesiastical leases, would undoubtedly attain the end.

PROVISIONS.

PROVISIONS are higher than they were twenty years ago, without any appeararance of a tendency to fall. Wheat, upon an average, from five shillings to five shillings and sixpence per Winchester bushel; beef, from three shillings and sixpence to four shillings and sixpence per stone, fourteen pounds to the stone; mutton, four-pence per pound; potatoes, from eighteen-pence to two shillings per bushel. Potatoes, during the last twelve years, have degenerated. Has this been caused by the practice of cutting the sets? And is it not probable, that by planting whole potatoes of moderate size, viz. about an inch and a half in longest diameter, for a few years successively, this useful root might be restored to its original succulancy? Perhaps importing seed from other places, as a change is often of use, or raising seed from the apple, an excellent practice, would answer the purpose.

ROADS.

THE public roads are in good condition, but the private township roads are in a very indifferent state; for the Surveyors appointed in the present mode, in each township, wishing to avoid quarrels with their neighbours, are apt to be too remiss in the execution of their authority. But it is probable these roads would soon be improved, if the Justices would please to appoint Surveyors, with a salary, for a few djoining townships throughout the county, with authority o demand the performance of the statutable labour, and to direct what places shall be repaired, and the mode of performing the work ; and men certainly are to be found, who, for the trifling sum of one guinea and an half or two guineas a township, per year, would see the work properly executed, and think themselves honoured by such an appointment.

It is allowed by most people, that a proper application of he statute duty (as the law now stands) is the only thing wanted to make the generality of township roads equally good as the public roads, upon which the statute labour and composition are rigorously enacted. With regard to turnpike roads, we have many in the county, and when the bridge now constructing near Sunderland is finished, it hath been said a turnpike road will be made from it to Newcastle, from thence to South Shields, and from Shields again to Sunderland. It would be an improvement on the turnpike road between Stockton and Durham, to lay it nearly in a straight line from the angle a little south of Blakiston Bank-head, to the village of Thorp, which would be shorter, more upon a level, and would avoid the dangerous narrow passage at Blakiston Mill. There are upon this road two nuisances near each other. Towards the bottom of the descent from Garmonsway Moor a deep quarry incroaches shamefully into the road, making it unstatutably narrow, fenced only with a few loose stones, thrown together carelesly along the brink of the precipice, and a little below the bridge over Coxhowbrook, is too narrow, and the battlement too low. The road, at the north end of Croft Bridge, is frequently covered by the inundations of the Tees, and is then dangerous, and sometimes impassable. These dangers and inconveniencies might be prevented, by raising the causeway with arches in proper places, sufficient for the passage of the floods. The straight road from Northallerton to Darlington, and shorter by two miles than that by Croft-Bridge, is by Neasham-Ford; and if put under the authority of the Commissioners of the Coal Road, who will apply next Sessions of Parliament for a renewal of their Act, it might be mended, and would be preferred by many, the ford being generally shallow; but as the Tees sometimes rises suddenly, for perfect safety, a bridge would be required; and it it is thought by good judges, that the sum necessary for the whole of this improvement might be raised without difficulty.

A work of the same nature with that before-mentioned, at the north end of Croft-bridge, is equally necessary between Sunderland and Browney-bridges. But incomparably the greatest nuisance of a bridge in England, is to be found in the city of Durham itself. Elvet-bridge, not only situated in the center of it, but on the high road between the two capitals of the united kingdom, and of great length, is so narrow that two carriages can hardly pass each other without danger; and yet the number of them, and the croud of people on foot and on horseback upon it, are often very great.

On the road between Durham and Newcastle, an improvement hath been in contemplation; it hath been proposed to avoid the high and long ascent to Gateshead-fell, and to lay the road nearly upon a level from Birtley, along the Vale of Lamesly, to Gateshead.

CANALS, &c.

We have not any navigable canals in this county. In the year 1770 a survey was taken, and a plan made, with an intention to have one from Stockton to Winston, being thirty-three miles, four furlongs, nine chains, and forty-two links. The estimated expence was 63.722l; but it was never carried into execution. And in the year 1791 an improvement of the navigation of the river Tees was proposed, by making a cut across a neck of land between Stockton and Portrack, thereby to admit a freer tide, and shorten the distance between these places two miles, and the expence was estimated at 5000l. It hath not yet been executed. Below the place of this intended cut, the bed of the Tees grows wide, and is encumbered with moveable sands. Dr. Campbell, in his Political Survey of Great Britain, says, it is probable that this river will, some time or other, attract the attention of Government, and by the aid of a skilful engineer, be made to scour itself a narrower, more direct, and safe channel. Whenever that is accomplished, some thousands of acres will be gained to cultivation.

FARM-HOUSES AND OFFICES.

THE houses in general are well situated in the midst of the farms, and tolerably commodious; the offices too frequently scanty; the fold-yards too few and too small, which is a great hindrance to getting the ground freed in the spring, and thereby the benefits that would be obtained by saving the grass land in the spring, and by the increase of manure that would be bred if the stock were confined, are obstructed. Granaries are rare, to the great detriment of the farmer; when compelled by want of fodder, he is obliged to thrash out his corn before it is dry, and consequently it frequently happens, that if he sells at all, it must be at a low price. Orchards are uncommon, unless in the southern parts of this county, where they are general and profitable. The disposition of a farm-house, with offices, in the View of the Agriculture of Northumberland, seems very convenient. It would seem, however, that the rooms of the house, if built according to the scale, would be too small.

LEASES.

The leases are generally for short terms, seldom exceeding six years, with the usual covenants to secure to the landlord a due payment of rent, and to the tenant a quiet possession of the farm, and of his away-going crop. That the landlord shall at the commencement of the term put all into tenantable repair, and the farmer shall leave all in equal good condition at the end of it. That during the term the landlord shall uphold the main walls, timbers, and roof, and the tenant all other parts at his own expence, and lead all necessary materials. That the tenant shall scour and dress a quantity of hedge annually, &c. There are other covenants generally inserted, which are of a more doubtful nature, as, that the tenant shall be confined to pursue a scheme of husbandry annexed to the lease, by which he is restrained to fallow one third part of the tillage land annually, and consequently to take no more than two crops to a fallow; whereas a skilful husbandman having, by frequent ploughings, and other proper management, got his fallow early into condition, might, much to his own benefit, and not less to the improvement of the soil, have a crop of turnips, or where the land is not fit for turnips, of rape, cole seed, &c. The produce to be eaten down where grown, or the crops might be varied in other respects. The covenant therefore should be, as it seems, not to take two crops of white corn without a green crop interposed. Another covenant very frequent in leases, is, that the tenant shall spread two cart loads of lime on every acre of fallow; whereas the best judges are now agreed in opinion, that lime is prejudicial to old arable, and only beneficial to new lands; and in that case it should in some instances be applied in greater quantities. Lime, therefore, should be left to the judgment of the farmer. In respect to the duration of the terms of leases, longer terms would undoubtedly encourage the farmer to risk a great expence, and consequently go upon a larger scale of experiments, which, under proper restrictions, might tend to the improvement of his landlord's estate, as well as his own immediate benefit.— The fertility of lands of old inclosure in this county, is thought, in general, to have suffered a considerable decrease of late: probably that decrease may have been occasioned by the proportion of tillage to the grass land in each farm having been too great, considering the general thinness of the soil; to rectify which, it seems recommendable, that the quantity of tillage should be reduced to one third, instead of one half of the whole farm, which is now too general; also that the manure bred upon the farm should be laid upon the grass lands, or that which is fallowed the last time, in order to be laid down to grass; nor can manure be better employed, because it will not only increase the crop of corn, but also promote the growth of grass seeds; and indeed without such aid in clayey soil which hath been long under tillage, their taking root will be precarious, and their growth slow; and that frequent changes from grass to arable, and from arable to grass, in equal quantities, should be practised. By this mode of cultivation the ancient fertility would soon be restored.

It is to be observed, that much land in this county is held by church leases for lives, or for twenty-one years, renewable every seven, on payment of an arbitrary fine, evidently to the discouragement of agriculture; for no man will lay out his money in making improvements, and by that means purchase an increase of his fine at the ensuing renewals; nor is it less prejudicial to the clergy; for, whereas they have in the present mode, after the expiration of seven years, only one year and a quarter's rent for a renewal, if the fines were ascertained even at that rate, and the leaseholder thereupon encouraged to exert himself in making improvements, the annual value of the estate would be raised, perhaps doubled; and instead of the old unimproved year and a quarter's-rent, they would get an increase in proportion to the value raised, nor is there any reason to apprehend an unjust valuation; for in case of dispute, it must be left to the decision of a jury, and the odium of arbitrary power being removed, as fair a verdict might be expected in this case as in any other. The same reasoning will apply to the renewal of leases for lives, in favour of ascertaining the fines. But to crown this article upon leases, it will be sufficient to exhibit a plan of a lease invented by the late Lord Kaims, and published by Dr. Anderson in his General View of the Agriculture of Aberdeenshire. The design appears so excellent, that had it been conceived one hundred years ago, and generally adopted, it is very probable the agriculture of this island would, before this time, have been carried to the highest point of perfection, and our present labours on this occasion obviated. Dr. Anderson, at the conclusion of his judicious reflections, wherein he illustrates the excellent principles and tendency of it, mentions a few clauses which he apprehends will be necessary in such a lease. "Some provision," he says, "ought to be made respecting trees, on a lease of this kind, as it is probable the tenant might find it convenient to plant, which by the common law of Scotland he cannot do at present, with a view to profit.— Perhaps the wood, if any was on the farm at the time of his entry, ought to be valued, and he should be bound to leave at least an equal value upon it, or pay the balance.——. Whatever timber trees he himself had planted, he should be at liberty to cut at pleasure for the use of the farm, unless it were such individual trees as the landlord, from situation or other causes, should think proper to mark for reservation. He should also have permission to sell such trees as he inclined, unless as above reserved, or during the last six years of any of the twenty-one years of the lease. But in case of his removal, the proprietor should either permit him to sell the whole trees that were over the value of the stock at his entry, or take the whole, or such part as he chose to reserve, at an appreciated value. In case of his removal also, the tenant should be bound not to out-labour the ground during the last six years of the lease, or to crop it improperly, or to carry off any straw or dung; otherwise to pay the damages that should thus accrue to the landlord, at the estimate of two honest men, to be mutually chosen, and to leave the houses in a habitable condition, and the fences in good repair." To these, perhaps, may be added a reservation of mines, liberty to the landlord or his agent to inspect the farm and buildings at all times; insurance by fire, as proposed by Dr. Anderson himself, in his article of farm buildings; above all, some security to the landlord against the malignity or indiscretion of a tenant, his heirs or assigns, who, without such check, might, during the first fifteen years of the term, impoverish and abandon the farm; a prohibition from underletting without the consent of the landlord. Local circumstances, and personal considerations, will probably suggest others, not unreasonably restrictive upon the tenant.

The plan of the lease proposed by Lord Kaims is as follows. That the lease should extend to an indefinite number of years, consisting of fixed periods, and at the end of each of which a rise of rent should take place, with permission for the tenant, at the period of each of these rises of rent, to give up his farm if he shall think proper; and granting a similar power to the landlord, upon proper terms, to resume his land if he shall think fit. The particulars of this contract, and the grounds on which they rest, are as under.

He assumes it as a postulatum, that a landlord and tenant are capable of forming a tolerably just estimate of the value of the land in question, for a short period of years, such as it is customary to grant leases for in Scotland, say twenty-one years; and having agreed upon these terms, which for the present we shall call one hundred pounds rent, the tenant expresses a wish to have his lease extended to a longer period. To this the proprietor objects on this ground, that it is not possible to form a precise estimate of what value the ground may be at the end of that period. He has already seen, that ground for the last twenty-one years has increased much more in value than any person at the beginning of that period could easily have conceived it would have done, and therefore he cannot think of giving off, just now, for a longer period, as a similar rise of value may be expected to take place in future. This reasoning appears to be well founded, and therefore to give the landlord a reasonable gratification, he proposes that it should be stipulated, that if the tenant should agree to give a certain rise of rent at the end of that period, suppose twenty pounds, the landlord should consent that the lease should run on for another period of twenty-one years, unless in the cases to be after mentioned.

But as it may happen, that this twenty pounds now stipulated to be paid at so distant a period, may be more than the farmer will find he is able to pay, an option shall be given to him to resign his lease if he should find that is the case, by giving the landlord legal notice one year at least before the expiry of the lease; but if that notice be omitted thus to be given, it shall be understood that the tenant is bound to hold the lease for the second twenty-one years, at the rent specified in the contract. And if the landlord does not give the tenant warning within one month after that period, it shall be understood, that he too is bound to accept of the stipulated additional rent for twenty-one years that are to succeed. It may, however, also happen, that the sum specified in the lease may be a rent considerably below the then present value of the farm, or the proprietor may have very strong reasons for wishing to resume the possession of that land, or to obtain an adequate rent for it. A power therefore should be given to him, in either case, to resume the lands if he should so incline. But as a great part of that present value may be owing to the exertions of the farmer, who has laid out money upon the farm, in the hopes of enjoying it for a second period of twenty-one years, it would be unjust to deprive him of this benefit without giving him a valuable consideration for that improved value. On this account it should be stipulated, that in case the proprietor at this time resumes the farm, he shall become bound to pay the tenant ten years purchase of the additional rent he had agreed to pay, which, in the example above stated, would be 200l.

But the land may be worth still more than the twenty pounds of rise mentioned in the lease, and the tenant may be content to pay more, say ten pounds, rather than remove, and he makes offer accordingly to do so. In that case the landlord should be bound, either to accept that additional offer, or to pay *ten* years purchase of that also, and so on for every other offer the tenant shall make before he agrees to remove from the farm.

In this way the landlord is always certain, that he can never be precluded from obtaining the full value for his land, whatever circumstances may arise; and if the tenant shall prove disagreeable, so that he would wish rather to put another in his place upon the same terms, it never can be any hardship upon the landlord to pay the stipulated money, because it would be the same thing to him, as if he bought a new estate at ten years purchase, free of taxes, a thing he never can expect to do. It is indeed true, that it would be more advantageous for him to allow the present tenant to continue, and therefore this alternative will be always, unless in very extraordinary cases, accepted of, as it ever ought to be; and thus the tenant's mind is impressed with a conviction that he will continue in his possession, a conviction that ought ever to prevail, because it stimulates to industry in the highest degree. And as the tenant is thus certain that at the very worst, his family must be intitled to draw a reasonable remuneration for the exertions of his industry, he can never find the smallest tendency to slacken his endeavours in any way. By stipulating in the original lease in the same manner, that at the end of the second twenty-one years the lease shall be continued for twenty-one years more, and so on at the end of the third, fourth, and any farther numbers of periods of twenty-one years, on agreeing to pay a specified rise of rent, reserving to each party the same privileges as above described, the lease might be continued to perpetuity, without either party ever being in danger of having an undue advantage over the other. The tenant will always be certain of having a preference given him over every other person, and will of course go on with unceasing exertions to better his land, which will of necessity tend to augment the income of the proprietor, much more than could have happened under any other system of management.

COMMERCE AND MANUFACTURES.

THE commerce of this county depends upon the export of the produce of the mines and manufactures. The mines are of lead, exported from Newcastle and Stockton; and coals, exported from Newcastle and Sunderland; and there is a considerable land-sale of coal from this county into the North Riding of Yorkshire. There is a quarry which produces mill-stones in the Forest of Weardale. There are upon Gateshead-fell, in this county, quarries of grind-stones of great fame and extensive sale, under the denomination of Newcastle-grind-stones. There is also a vend of lime to a very considerable amount from this county into the North Riding of Yorkshire.

THE manufactures in this county are, at Barnard castle, and at Darlington, tammies.

Woollens.—At Durham, tammies, carpets, and waistcoat pieces.

Linen.—At Darlington, huckabacks; at Stockton, diaper and damask.

Cotton—At Castle Eden, Stockton, and Bishop-Auckland.

Sailcloths—At Stockton, Sunderland, and Shields.

Yarn.—At Darlington is a very curious machine of late invention for spinning flax into yarn, by the use of which a saving will accrue to the nation, that article having been before purchased from abroad annually, to a considerable amount.

Roperies—At Stockton, Portrack, Sunderland, and Shields.

Paper, Brown and White Brown—At Croxdale, Stonebridge-house, Lamesly, Lintzford, and Heworth-Shore.

Glass—At Shields, Bilquay, South-Shore, Southwick, Ayres-quay, and Bishop-Wearmouth Pans. There is at Darlington a machine for grinding spectacle glasses.

Copperas—At Heworth-Shore, Offerton Wood-houses, Hilton Ferry-boat, and Deptford.

Salt—At Shields from sea-water, at Birtley from streams impregnared with salt, found running in the workings of ancient coaleries.

Potteries—At Newbottle, Hilton Ferry-boat, Southwick, and Snowdon's Hole.

Bricks and Tiles—At Shields and Derwentcoat, for home consumption, and a considerable exportation.

Cinders---At Felling-Shore, and Snowdon's Hole.

Smelting Mills, or Refineries for separating Silver from Lead---At Bilquay, Heworth-Shore, Snowdon's Hole, in Weardale, and in Teasdale.

Iron Founderies---At Whittle, Winlaton, Winlaton Mill, Swalwell, and Gateshead

Iron Works---At Winlaton, Winlaton Mill, Swalwell, Team, and South-Shore: at Lumley a forge mill for converting scrap iron into engine boiler plates, and cast metal into malleable iron.

Steel for Sword Blades---At Shortley-bridge, Derwentcoat, and Black-hall Mills.

Vessels—are built on the Tees, Wear, and Tyne, from the small craft employed on those rivers, to ships of six hundred tons burthen.

MISCELLANEOUS REMARKS.

IT only remains to be observed, that the exaction of tithes in kind, where that measure is adopted, has a tendency to obstruct agricultural improvements. A spirit of improvement, however, is certainly awake in this county. Fences, which have lain long under neglect, or been injudiciously treated, are now better understood, and beginning to be an object of more care. The rage for overstocking, which hath been too general, is restrained. By some, fields are saved from the scythe or depasturage, between May and December, and then come into good use for their stock. Watering of grass land hath been lately attempted, and with such appearance of utility, that there is little doubt of its being adopted wherever practicable. It seems more particularly suitable to the western part of this county, where springs, issuing plentifully from the sides of hills, may, with the application of a little art, be conducted to water the soil below. The importation of seed of wheat, and other grain, from the southern counties, is not unfrequent, and attended with such success, that it is much to be wished the practice should be more extensive.

CONCLUSION.

SUCH are the observations and reflections which occurred to the Author of this paper, in his perambulation of the County of Durham, and he shall commit them to the perusal and better judgment of his countrymen, (if they have the honour to be laid before them by order of the Board of Agriculture) with deference and pleasure, hoping they will avour the Report with their friendly emendations, and with onsiderable additions; the subject he knows is a favourite ne among them. Upon the whole, he thinks there is round to indulge the pleasing hope, that we are still advan-ing towards perfection in Agriculture; for it may with ruth be said, that proposals for improvements are received with attention, and judged of with candour. Experiments are rosecuted with a liberality highly meritorious, and never o be enough commended; nor is any character in more steem, than that of a skilful communicative Cultivator.

APPEN

APPENDIX

TO THE

AGRICULTURAL VIEW

OF THE

COUNTY OF DURHAM.

APPENDIX.

No. I.

Letter to Sir WILLIAM APPLEBY, *on the Agricultural Practices in the Neighbourhood of* DURHAM.

SIR WILLIAM,

AS you have pleased to require me to give you an account of any beneficial agricultural practices in this county, which, if adopted in other places, might be of general utility, and having done me the honour, at the same time, to intimate that the President of the Board of Agriculture would be highly obliged thereby, I feel it my duty to give him and the Board, through you, every information in my power; and shall be ready to give the same to any individual who may wish to inspect my machines. You will readily perceive, that it will be unnecessary for me to specify any mode that is already universally practised in this neighbourhood, every such particular being, I am persuaded, inserted in the Report made by your ingenious and sensible friend, Mr. Grainger, of the Agriculture of this County; otherwise it should have been done if you had desired it, but it did not appear to me to be your wish.

I will therefore take the liberty to inform you only of such as are not, perhaps, used by any farmer here but myself, and by which I find the greatest benefits, and would on that account seriously recommend my brother farmers to adopt the same. You seemed peculiarly attentive (as I understood by direction of the President of the Board) to my Schufler, or Cultivator, and Double Bull Patent Harrow. I therefore take the liberty to inform you, that I have, for these two years, or more, used the Schufler or Cultivator, as described in the Nottingham Agricultural Report, which with many others you had the goodness to lend me. I find it of such singular advantage, not only in ploughing, but also at the same time in cleaning, six acres for one done in the usual way, with more dispatch and efficacy, than any other plough, harrow, or machine whatever, that I do honestly declare to Sir John and you, I would not want it for a hundred times its price, though I can, and intend to make some improvement in it. When I had the honour of seeing you, you also observed another very curious and excellent instrument I have, namely Mr. Perkins of Stockton's Double Rolled Patent Harrow, value two guineas. I assure the Board and you, I would not be without it upon any consideration, such are its good effects.

You saw my Dutch Drilling and excellent Sowing Machine for all sorts of grain, which you did not think was comparable to the above-mentioned person's new invented Drill Machine for the like purposes, value five guineas. Accordingly I mean to examine, and if approved, will have one of them.

You were also very attentive to my large Horse Thrashing Machine, for every species of grain (value 100l. at least); whereby I can, if necessary, with expedition and efficacy, thrash out a large stack in a day; and notwithstanding you were pleased to avow yourself hostile to the invention and use of any machine destructive of the manual labour of the peasant, or useful handicraft, as being highly injurious to the population of any kingdom, which you said, and perhaps very justly, is its greatest treasure, yet I must, with great respect, beg leave to differ from you, being clearly of opinion, that not only the Horse, but Hand Thrashing Machine, which you told me was making by Mr. Murray of Chester-le-Street, near Durham, (value from ten to twenty guineas) would be of general utility, and great service to the country, for the reasons I had the honour to submit to you; and humbly flatter myself, that no such fatal consequences will result therefrom as you seem to apprehend.

I condemn with you, Sir William, the very impolitic, yet general practice of this county amongst the farmers, in not laying on their manure till such time as it is rotten, as they term it, when most of its salts and juices are exhausted by exhalation or otherwise, whereby it becomes of little or no use when applied. Accordingly my practice has long been (a practice from which I derive the greatest advantages, not only improving the ground by it, but also obtaining a much greater produce at the time) to cause the dung to be carted out, and laid on the ground six months sooner than is usual, having previously turned it twice over as speedily as possible; the sooner the better; and every Farmer, in my humble opinion, would do well to follow the same practice. I think proper to acquaint you, that I have, this season, dusted sixty bushels of soot upon two acres of land for turnips, and also intend to manure it by way of experiment, and expect it will amply repay me with good interest; when you shall be informed of the effects, to be transmitted to the Honourable Board of Agriculture.

I am fully sensible of the great advantages derived by watering meadow lands, insomuch so, that I would spare no expence to accomplish it; but the situation of my grounds, and the want of the necessary springs therein, render such beneficial practice impossible; however, it certainly ought not to be neglected by every competent Farmer who has the good fortune to be possessed of the means.

I concur with you, most heartily, Sir William, that it would be greatly to the advantage of every Farmer, to lay in all, or as much of his meadow land as he possibly can, for the production of hay, by Candlemas, or new Lady-Day at furthest, when he would be assured of a plentiful crop every year. For one, I make a constant practice so to do, and consequently never am in want of fodder, as is too often, very unfortunately, the case, from the contrary, though general use; and I am the more enabled to do it, because I keep all my horses in the fold-yard, fed with green fodder, principally clover, during the whole summer, thereby collecting a much greater quantity of manure, which amply repays me for the extra trouble. But as you are pleased to inform me, that the cultivation of lucerne is astonishingly productive, and consequently must be very beneficial for such purposes, as it may be cut three or four times in a year, I will esteem myself highly obliged, if you will obtain me some of its best seed, when I will pay every attention to its cultivation, and report its success to you in proper time.

My most grateful acknowledgements, with those of many of the capital farmers in this neighbourhood, are justly due to you, for the perusal of the Agricultural Reports of the different Counties, printed by the direction of the most honourable and beneficial institution that, in my opinion, ever was established in any country; and sincerely flatter myself, that the kingdom in general will derive infinite advantages therefrom, if the useful practices recommended in these Reports are generally adopted.

Any farther information which it is in my power to furnish, shall always be most readily given by,

Sir,

Your most obedient,

And very humble servant,

JOHN LEWKUP.

Hough-Hall, near Durham,
June 4, 1794.

No. II.

Letter from Mr. SILAS ANGUS, *Land Agent to the Earl of* SHAFTESBURY, *to Sir* WILLIAM APPLEBY, *respecting the Husbandry of his Neighbourhood.*

SIR,

AGREEABLE to desire, I shall attempt to give you a sketch of some of the methods of husbandry practised in this neighbourhood. The former practice was two crops and a fallow; but for want of being changed, the land in tillage became tired of growing corn, especially oats. In order to remedy that inconvenience, a new system was established under a four course shift, or what is here called *four aders*, viz. wheat, clover, oats, and fallow; and by that alteration great benefit was at first derived. As clover then was rather a novelty to the land in this quarter, it generally produced a plentiful crop, and was also the means of a good crop of oats succeeding it. But now the present mode of some places hereabouts is under the regulation of five aders, which is continuing the clover crop two years; and this was thought a probable means of greater improvement. But by too frequent a repetition of clover, it renders it small and unhealthful, and in some seasons it is very hazardous whether it takes root or not. Under these doubts, the occupier frequently sows about half a bushel of rye-grass to an acre, along with clover, for the better security of obtaining a crop; notwithstanding which the tenant is often found to labour under great disadvantages; because a period of two years is by far too short for land to make any improvement, and it is not customary for the occupier to sow as much grass seeds along with the clover for two years, as if it were to be continued in grass for some time. When therefore the clover entirely misses, the wild grass frequently takes place, and thereby renders it very expensive to give it a proper cleansing. And I am clearly of that opinion, that land of a poor clayey nature would be preserved in a better state by changing every six years, admitting it were kept under a course of judicious management. I would not be understood to state that practice good for land of every description; as ground in a very short distance will vary very much in its quality, and therefore land of different texture often requires different systems. Yet agents are too apt to make out the same scheme of husbandry for all varieties of ground, and when that is the case, some are great sufferers when they are tied down to fulfil their engagements, by which they may be obliged to keep a piece of ground for two years in an unproductive state; when others, who are under the same conditions, may lose nothing by it, having land adapted for the purpose. In sowing land down for grass, I have always, within the compass of my experience, found rye-grass along with clover the most beneficial. In breaking up of swarth land, paring and burning has, by some, been held in great estimation; but for my part, I think it a great injury; as the best quality of the land must lie at the surface, consequently a part of that must be consumed along with the sward, and chiefly where ground is of a brick clay nature, as the ashes, for many years after the paring, will be found collected in hard lumps, which, from the

er it must attract, will certainly make it pernicious rather than afford any
nent. Therefore I would by no means give countenance to that prac-
ss in some particular cases, where the turf had contracted such a moss
r obstructions, as to render ploughing without paring impracticable.
of late has been found of great utility in this quarter, and answers every
could be expected, when the dains are laid to proper advantage, chiefly
n hilly ground, and in a coal district, as there frequently happens to be
s in some parts of the declivity; and where these springsof mineral water
it is pernicious to the herbage, and renders the food unwholesome to
And when proper drains are laid at the head of these springs, an evident
nent is soon discovered, by the ground wearing quite a different
But I would recommend open stone drains, if it were possible to procure
ials at any convenient distance. I shall now beg leave to conclude with
what I hope may tend to the public good, namely, a receipt that
ound an

INFALLIBLE CURE FOR THE MILK FEVER IN COWS.

ix ounces of spermaceti, four pennyworth of saffron dissolved in three
warmed ale; divide that into three equal portions, and give one of them
r. I have at various times seen almost immediate relief obtained by
ine, when the disorder appeared with all its most dangerous symptoms;
this hereafter fall into the hands of any who may reap a similar bene-
e prescription, I shall be happy in having communicated the intelli-

I am,

Sir,

don, }
, 1794. }

Your very humble servant,

SILAS ANGUS.

My Lord's numerous tenants join me in thanking you most sincerely
rusal of the Agricultural Reports, from which we have derived much
d information.

No. III.

No. III.

Extract of a Letter from Dr. Collingwood *of* Sunderland *to the President the Board of Agriculture, respecting the Husbandry of the County of Durh particularly the Eastern Part of it.*

SIR,

As I had made a tolerable accurate survey of the East division of the County Durham, before I was honoured with your polite and friendly letter, and a have impatiently waited to see the observations of the Society here, without he ing any thing of their coming forward, I cannot help communicating to you th few observations before you leave London.

The County of Durham is bounded on the East by the sea, thirty-two mile by the Tees and Yorkshire, stretching Westward, thirty-eight miles; by N thumberland, North; and Cumberland and Westmorland, West, where it term nates in a triangle, the sea coast being the base. Although there are no mounta of any size in this county, on the East side there are several eminences, * wh are the most fertile; and on the Wear and the Tees, especially near their sourc some very barren hills and uncultivable *wastes.* In the Western district allu to, the lead mines, &c. make up for the sterility of the soil, and the coal mi in the Eastern division, from the increase of population, assist in fertilizing a s otherwise stubborn.---But in order.---From Shields, stretching the breadth of county, and ten miles to the westward, the soil is only of two sorts, viz. c and a red loam (mostly heavy) on a lime-stone bottom. The populousness Shields, Sunderland, &c. and their respective vicinities, encourage the farmers keep great numbers of cows, which cows are of the best kind that can be p chased, both for milk and butter: the first qualification is most attended to, most of their milk is sold new from the cow. In milk and calf each cow avera ten pounds per annum. Average of rent in said farms one pound ten shillings acre. A cow will eat two acres of grass, and as much under hay during season, to which must be added malt dust, draff or grains, turnips, &c. All pences I should suppose about seven pounds *per cow*, consequently a dairy of cows leaves the farmer thirty pounds per annum, and the profits on the sm patches of corn, to support his family, and pay interest for money risqued. A rage price of cows in their prime, from nine pounds to ten pounds ten shillin If their land be loamy they grow potatoes, wheat, oats, and again potat or turnips; always dung for the two last crops. The potatoes are plante drills of from two to three feet breadth, and one asunder. The quantity per a planted sixteen bushels. Average of the produce from two to three hundred bu els, which sell, in the retail way, from one shilling to one and six-pence per bus Wheat after potatoes, a good clean crop between three and four quarters. T

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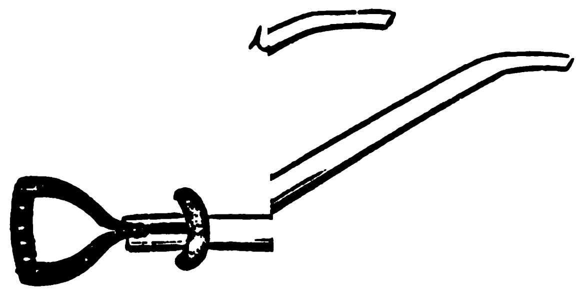
* Vide my Essay, in Young's Annals of Agriculture, on the different Strata in the Eastern P this County.



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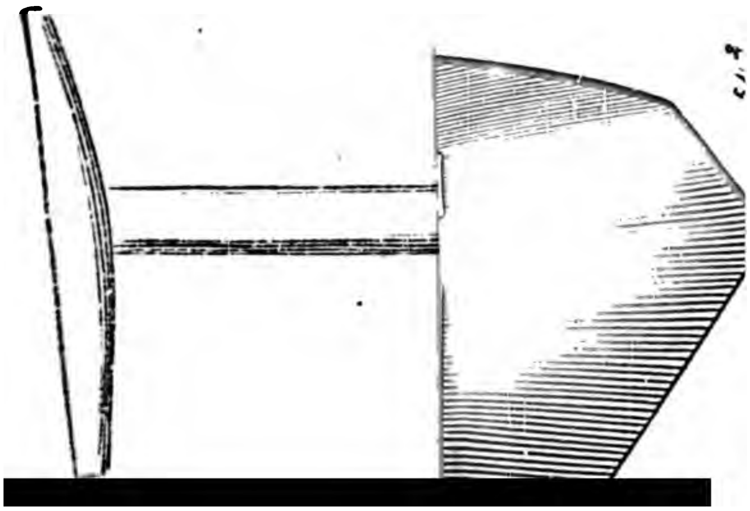

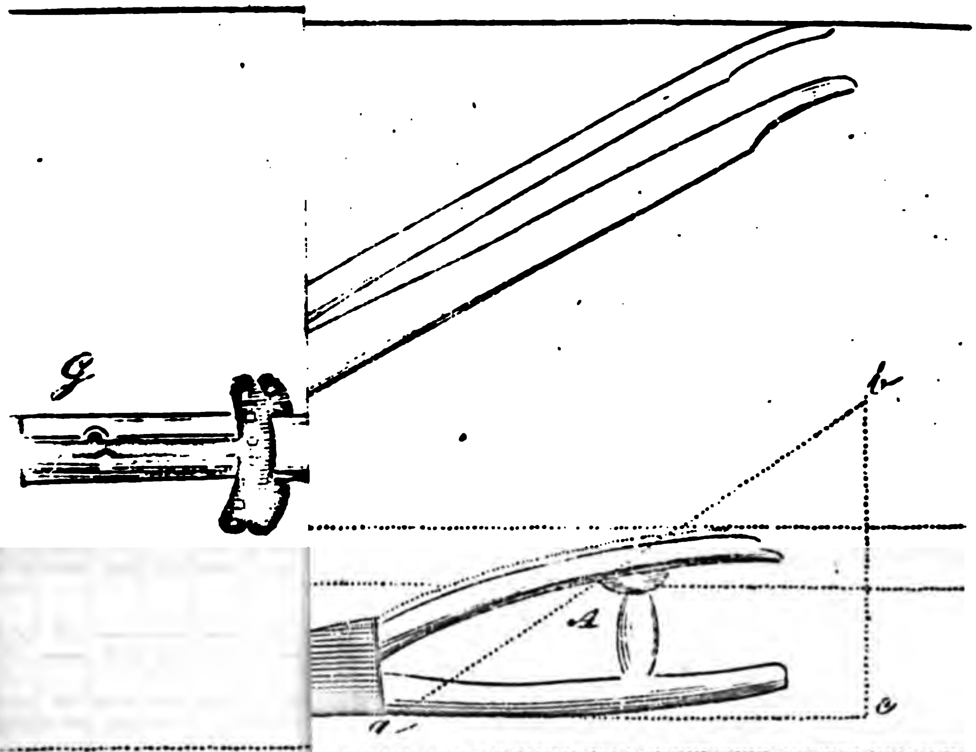
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	BAPTISMS.				MARRIAGES.				BURIALS.					
.	1st Period.	2d Period.	Increase.	Decrease.	1st Period.	2d Period.	Increase.	Decrease.	1st Period.	2d. Period.	Increase.	Decrease.	Total population in 1780.	OBSERVATIONS.
outh,										Brought over			46920	
1670	2613				453				1930					
1765		2072		541		750	297			2374	444		3930	—The second period contains
d,														years, which accounts for the dec
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o 1670	124				64				104					
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Spring														By a survey Males. Females.
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o 1775		1804	375			572	23			1518	357		4897	—in 1786 - - 2430 2467
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o 1779		345				1085				695			990	Increase of 38 120
,														
o 1670	134				28				96					
o 1775		102		32		44	18			59		37	150	—The second period only nine
n,														
o 1679	515				109				420					
o 1775		518	3			129	20			449	29		750	
- -	—	—	—	—	—	—	—	—	—	—	—	—	200	—The supposed number, the b being inspected.
Total, Easington and Chester - - -													67857	
; the shires of Norham, Bedlington, Islandshire, Craikshire; the other ds of Stockton and Darlington may contain nearly as many as the f Easington and Chester, - - - - - - - -													678[illegible]	
													135734	
addition since 1780; the agriculture, manufactures, mining, navi- , and commerce of the county, having since that period very con- ly increased, - - - - - - - - - -													10000	
Total population in 1754, supposed to be - - -													145734	

lation of the parish of Castle Eden has increased much since Mr. Bunden established a considerable manufactu f Lanchester has become much more populous since the division of a large common belonging to it, which former alue to the proprietors, but is now finely cultivated, and become a great acquisition to the county. Wherever e found in the table, it is chiefly owing to the division of some waste land, or the great increase of the coal and o fimes.

GENERAL VIEW

OF THE

AGRICULTURE

OF THE COUNTY OF

MONMOUTH.

GENERAL VIEW

OF THE

AGRICULTURE

OF THE COUNTY OF

MONMOUTH,

WITH OBSERVATIONS ON THE MEANS OF ITS IMPROVEME

By Mr. JOHN FOX.

DRAWN UP FOR THE CONSIDERATION OF THE Gt Brit BOARD OF AGRICUL
AND INTERNAL IMPROVEMENT.

BRENTFORD,
PRINTED BY P. NORBURY.

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no.4

TO THE READER.

IT is requested that this paper may be returned to the Board Agriculture, at its office in London, with any additional rema and observations which may occur on the perusal, *written on margin*, as soon as may be convenient.

It is hardly necessary to add, that the Board does not consi itself responsible for any fact or observation contained in this Repo which, at preſent, is printed and circulated, for the purpose mer of procuring farther information, respecting the husbandry of t district, and of enabling every one to contribute his mite, to t improvement of the country.

The Board has adopted the same plan, in regard to all the ot counties in the united kingdom; and, will be happy to give ev assistance in its power, to any person, who may be desirous of i proving his breed of cattle, sheep, &c. or of trying any useful periment in husbandry.

MONMOUTHSHIRE.

INTRODUCTION.

THE county of Monmouth, situated in the 52d degree of North Latitude, and the 4th of West Longitude from London, is one of the frontier counties between England and Wales, anciently called Marches. It is a maritime county, and was formerly a part of South Wales, but has been regarded as a part of England, ever since the reign of Charles the Second. It was not included in the Saxon Heptarchy. It is in the province of Canterbury, the diocese of Landaff, and in the Oxford circuit.

BOUNDARIES.

It is bounded to the Southward by the Severn Sea and Bristol Channel, and a small part of Glamorganshire; on the Westward by Glamorganshire and some part of Breconshire; on the North by Breconshire and part of the county of Hereford; and on the East by part of Herefordshire and part of Gloucestershire.

EXTENT.

It contains the six hundreds of Skinfrith, Ragland, Abergavenny, Usk, Wentlooge, and Caldecot. Its extent is reckoned to be about 33 miles long and 26 broad, in circumference about 110 miles, containing, it is supposed, 550 square miles, or 352,000 acres; having 127 parishes, and 7 market towns, about 6,500 houses, and about 39,000 souls. It returns three Members to Parliament. Monmouth, which was the place of nativity of Henry the Fifth,

s the county town, sends one member, and the county two. The county furnished originally 240 men to the national nilitia, but the number has been of late considerably ugmented.

MARKET TOWNS.

The principal towns are Monmouth, Abergavenny, (which gives the titles of Earl and Baron to the noble family of Neville,) Chepstow, Newport, Usk, Caerleon, and Pontyool, which have respectively excellent markets.

The most noted places in this county are Goldscliffe Point, Denny Island, Charston Rock, St. Treacle Chapel, the Severn mouth, and the Usk mouth, with the Hatterel, Peny Vale, and Valire Hills, Earls and Wentse Woods, with hose in the valley of Tintern, &c. the venerable Abbey herein contained on the banks of the river Wye, &c. &c. It is said there were formerly four Roman Stations in this county, viz.

Casto Legiones,	now Caerleon*.
Iska Leguam Augustam,	now Usk.
Gabannium,	now Abergavenny.
And Venta Silurum,	now Caerwent.

The Roman roads in this county took three directions:

One went from Caerwent across the Severn, to Bath,
Another to Glocester and Dorchester,
And another from Abergavenny to Chester.

Offa's Dyke begins at Brockley Ferry, and passes through his county to Radnorshire, a part of it above the town of Chepstow.

RIVERS.

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* Caerleon was a Bishop's See, had two Universities in it, and it is aid was nine Miles in circumference, being at that time a very large epulous place —'Tis supposed it was destroyed by fire, as the earth bout it is very black, and is remarkable for its producing extraordinary arge crops of hay and corn, where the lands have been broken up; as in ome few spots has been the caſe.

RIVERS.

The principal are, I. The celebrated Severn, which
shes the southern boundary of the county; II. The noble
er Usk, which rises upon the western border of Bre-
shire, nearly intersects that county, and enters Mon-
uthshire at a short distance from Abergavenny by which
uns, and continues its fertilising course through the heart
he county of Monmouth, washing Usk and Caerleon,
lso Newport, a small distance below which town it fi-
y discharges itself into the Severn Sea.—The rivers Wye,
now, and the Romney, are the boundaries which separate
om other counties; except Breconshire on the north-west,
a part of Herefordshire on the north, to which this
nty joins by land; for the Wye divides it from Glouces-
ire on the east, as the Mynwy does from part of Here-
shire to the north east, and it is separated from Glamor-
shire on the west by the Romney. All these rivers,
cially the Wye, and the Usk, abound with salmon trout,
other fish.—There are several others of less note.

CLIMATE.

he air is mild, temperate and healthy generally, even in
lower parts; and it is remarked that the southern situ-
ns bordering upon the sea, are less humid than the
ern mountainous districts:—Probably owing to the fre-
t breezes arising from the ocean; and the attractive
ence of the mountains over clouds that float low in the
osphere. Upon the hills it is bleak and piercing cold in
er. The snow will continue here a considerable time,
n in the vallies it soon melts away.—In the climate of this
ty, it is remarked by a respectable gentleman, in it there
is striking peculiarity, that in many parts of it, during
winter season, the fogs appear to shift periodically, in-
ch that where an extent of hilly country terminates in
djacent vale, it is not an uncommon thing to see the

former enveloped in a thick fog during a certain number of days, while the latter enjoys the splendor of a genial sun; and on a sudden the circumstances of both situations reversed, and continue so for nearly the same period of time.

GENERAL PRODUCE.

Almost every necessary article of life is to be found in the different districts of this charming county, and so contiguous to each other, that all parts are in general equally well supplied. The hills feed great numbers of cattle and sheep, and the vales produce plenty of corn, pulse, and grass.—Coals and wood abound; and are distributed as wanted at very reasonable rates. Lead and iron ores, with lime-stone and quarries of stone for building and pavements, tiling, &c. are also plentifully found within this luxuriant county; particularly a fine quarry a few miles from Newport, upon the line of the canal.

GENERAL FACE OF THE COUNTRY.

This county is not surpassed, if it be equalled, by any other part of this kingdom. The delightful diversities of hills and dales, woods and water, corn fields and meadows, are so beautifully scattered throughout the county, that nature, wherever we turn our view, gives to art a rule of perfection for the ornamental and intrinsic improvement of almost every estate.

The different proprietors of Persefield have benefited by this treasure, and have successfully studied to concentre in that sublime spot the united beauties of the county.—It will not therefore, I hope, be deemed improper to insert in an appendix a particular description of this place; as I conceive it will delineate some general principles of ornamental improvement that may be useful to the nobility and gentry of the united kingdoms.

SOILS.

There is a great variety of soils, of almost every kind,
epting that of chalk. At Chepstow, and in many other
ces, abundance of fine lime-stone, and upon many parts
the mountains, which proves to be of great use, not only
manure, and in buildings, but also as a flux for the iron
in making iron.

DIVISIONS.

The county of Monmouth may properly be divided into
e districts, in order that the peculiar features of each may
re distinctly be shewn, and the means for their respective
rovement be more effectually supplied. The first com-
es the southern part of the county, and partly consists of
e tracts of moor or marsh lands, containing in some parts
it a great depth of rich unctious loamy soil, in others a
t body of black peaty earth. In others again we find it
tly of a lighter loamy soil, whereon trees of different
ds grow, and thrive very fast, and may in some places be
ed commodiously in much greater abundance than at
sent, and in the space of a few years become valuable.—
other part is a mixture of clay and loam, forming fertile
adows, and above them an excellent reddish kindly soil for
n, turnips, and potatoes. The second division takes in
eastern line of the county and extends in depth a good
y on each side of the river Usk, and affords a treasure to
husbandman and grazier, that almost spontaneously sup-
s the various comforts of life. A richer soil is, I presume,
ely to be met with; it is in general of a faint red colour,
mbining softness with strength, equally benefiting by rains
l heat; its softness or unctuous quality giving it the power
retain much heat without scorching, and its strength or
th, causing it to receive much rain by absorption without

flooding, except on those parts of the lower lands where drains are wanting to carry the water off.

These natural advantages give the appearance of a garden to nearly the whole of this district. The third division comprises the western and most hilly part of the county, commencing where the last district discontinued; the soil upon the hills is in general of a thin peaty nature, covering strata of stone that lie over mines of coal and iron ore. There is, in one district, a large mass or body of land of this black peaty quality, which being dug in the summer months and burnt in heaps upon the spot, together with the heath growing upon it, will furnish a great quantity of ashes, which will prove a fine manure to spread upon these hilly lands, and thereby very much improve them.

Sainfoin, also, sow'd upon these waste uncultivated spots, where manure is at a distance, is found to answer very well, and will last a number of years, producing annually a good crop of excellent hay for the cattle and sheep that in winter is much wanted, and therefore be of great use in this part of the county, where such assistance is required.

That part of the land in the valleys and sides of the hills is checkered with woods, pastures, and some little spots cultivated and sown with corn. Some other upon the heights is rocky, and in the bottoms loamy and very productive in timber trees and extensive coppices of oak, beech, birch woods, &c. which may still be increased and improved to great advantage, both for timber and small brush wood, for making charcoal to carry on the iron-works to a better advantage.

DOMAINS.

The principal one is the fine seat already described of Persefield, with those of his Grace the Duke of Beaufort.—Troy-House, near Monmouth.—Sir Charles Morgan, Bart. Tredegar.—Robert Salusbury, Esq. (M. P. for the county,) Langweme.

Langwernie.—John Hanbury, Esq. Pontipool.—John Hanbury Williams, Esq. Coldbrooke.— ——— Lewis, Esq. St. Piers.—John Jones, Esq. Llanarth.—Richard Lewis, Esq. Llandilo.—Mess. Fettiplace and Blewitt, Llantaman, and several others, some of whose estates are annually bringing forward gradually into more and more improvement. I must with pleasure observe, a part has been and others are now, I hope, in the way to be so well managed with skill and a due attention to good husbandry, that in the space of a short time will instruct their tenantry, and afford an example worthy of imitation to other occupiers of land so capable of improvement in many parts of this rich and fertile county.

SIZE OF FARMS.

They are in general small, few rising above 200l. per annum, and very many of them falling from that sum to 60l. per annum, and some less.

THE COURSE OF HUSBANDRY.

This differs according to the situation of the land; the lower or marsh-lands are mostly used as meadows and pasture; but when broke up and sown with grain are amazingly productive. The upper lands are employed in a mixture of meadows, pasture, and husbandry; but in some parts, chiefly in the latter, wheat, barley, and oats are the principal grains cultivated. Peas are much attended to in the eastern part of the country, and some beans are produced upon the stiffest soils.—They have here fallen very short in their crops this summer, for want of dibling, drilling, and hoeing. The rotation of crops vary according as different systems govern the respective husbandmen. Too frequently, among the less intelligent farmers, summer fallows are prepared, wheat is sown, barley follows, and oats then succeed, with which clover is generally sown. But where green crops are introduced, the system is materially and more profitably altered;—

in some places fallows are prepared, well limed and manured for turnips, these being eaten off soon in the spring, afford an opportunity of introducing a crop of peas; the ground is then ploughed for wheat, barley follows, and afterwards clover.—In other parts wheat is sown on a clover lay, a fallow is afterwards made for turnips, barley and clover follow.—Fallowing is generally practised, but where farmers are necessitous, it is accompanied with lime, the principal and essential manure of this country. The usual time for sowing of oats is early in March, barley in April, wheat about Michaelmas and the beginning of October. The harvest for hay generally begins in June, for oats, barley, and wheat from the middle of August to the first or second week in September.

GRASSES.

Broad clover, rye grass, and trefoil are those which are principally cultivated. Dutch clover is esteemed most congenial to the soils of this county, tho' I think sainfoin and lucerne may in many parts be advantageously introduced.

CATTLE.

In the upper or northern parts of the county, towards Abergavenny and Monmouth, the Herefordshire cattle are chiefly bred, and consist principally of the deep red or brindled breed; the lower parts of the county, towards Newport, Pontipool, &c. are in general of the Glamorganshire kind, and are also much esteemed; they are mostly of a dark brown colour; the oxen grow to a pretty large size, as much as *eight hundred weight* or upwards, and are much in demand among the English graziers, who come from distant parts of England to buy them at the fairs, when three years old, &c. There are a great number of these oxen reared in the county, and when sent to England the change of pasture causes them to thrive surprisingly;—when fat they sell to great advantage. Some oxen now in the possession of a neighbour of Robert Salusbury, Esq. M. P. I saw feeding in the moory meadows below his house, towards the sea, were valued and have been sold since I saw them at 60l. per pair, to be sent to the Bristol market. They were as remarkably fine oxen as I ever saw.

SHEEP.

Those of this country are—in general small, particularly towards the mountainous parts;—in the middle and lower parts of the country there are some of a larger size, some crossed with the Herefordshire and different breeds brought from England. I saw at Mr. Salusbury's some thorough bred Dorsetshire ewes that cost him 25s. each, bought in England, and some lambs of the same kind that cost 15s. each;—these he bought this autumn to improve his stock. I also saw some good lambs of the Glamorganshire breed, lately purchased, which only cost half the price, and which we concluded were, considering the size and form of both, much cheaper. Mr. Yarworth, near Monmouth, Secretary to the Agricultural Society there, has also, with much spirit, introduced last year, a lot of the South-Down kind, which are much esteemed, and for which this gentleman has received a premium from the Agricultural Society of the county. The Cotswold sheep have also been introduced by Sir Charles Morgan, at Tredegar, as well as by a Mr. Ewer, a public spirited gentleman farmer, near Abergavenny. These are found to require greater keep than either of the other kinds; but experience will in a short time evince which of the different kinds will answer best in this county. The making these experiments is truly laudable, and will prove of a general benefit to this county, as well as to the kingdom in general.

IRRIGATION, or, WATERING OF LANDS,

Is not pursued so generally as it ought to be; many parts of the country lye peculiarly well situated, to admit of this improvement, which it is hoped will be speedily adopted, where it can be done with propriety, as it is found to be attended with such beneficial consequences.

IMPLEMENTS of HUSBANDRY.

The common country plough is in general use, as are carts with two wheels, and common drags and harrows drawn by oxen and horses, one or two horses frequently going before the oxen, to plough, &c. Sometimes four or six oxen are made use of to plough or draw waggons upon the roads, to carry corn to market, bring coals, &c.

OXEN.

Mr. Jones, of Clytha, a gentleman of fortune, and a very good practical farmer, has found by experience that an equal number of oxen in gears, drawing at length one before the other, instead of being yoked in pairs, will draw an equal weight with the like number of horses, and go equally regular, as each beast then stands upon his own strength, which when they draw in pairs is much reduced by one jostling against the other. I am glad to find the opinion of this respectable gentleman, as well as that of a worthy northern Cumberland Baronet, agree so perfectly with my own ideas upon this very interesting improvement, that of substituting oxen instead of horses, as much as possible, as they live much more hardy, are supported at a much less expence than horses, and are annually increasing at the time horses are decreasing in their value.

MANURES.

Lime and the produce of the farm-yard are the common manures. It is submitted, that lands near the sea shore would be much benefited by calcined or even bruised shells, if to be had in sufficient quantities; and also from the *sea weed* which is met with on the beach in some places, together with the digging of such tufted spots within the sea walls, which after the spring tides in the summer get dry and are capable of being burnt. These ashes will afford an excellent manure for the meadows, and render them much more productive.

MANUFACTURES.

There is at present a manufacture of flannels, some few coarse cloths, woollen stockings and caps, carried on in the mountains, which are brought down to the fairs, and sold at Abergavenny, &c. And there are a number of public spirited gentlemen of this county, I hear have come to a resolution to subscribe a thousand pounds each, towards carrying on this business upon a more extensive scale. It is supposed also in the neighbourhood of Newport, and upon the line of the canal up to Pontipool, (where there is such excellent coal at so low a price, and where there has been a manufactory of japanned ware carried on for many years) that there will be several manufactories of iron goods of various kinds, established, as may be made up on as good terms as in Warwickshire, Staffordshire, &c. and sent to Bristol and other seaports by water.

INCLOSURES,

Are very general, excepting several large tracts of waste and common land in different parts of the county, which at present remain in a state of nature. The advantages of inclosing commons, or waste lands, seem to have been hitherto too little considered; so that this improvement in Agriculture is much neglected: but it is hoped it will be attended to, so far in respect as it regards the subject of commons. The inclosures within this county are small, but in general I must say, are neat, and very commodious.

POPULATION.

Little can be said touching the increase or decrease of population by means of inclosing common fields; there having been so few inclosures of these, of late years made within this county. From the scarcity of hands, some will venture to assert, population may be presumed to be rather decreasing; but upon a general investigation, I am inclined to hope it is otherwise. This is conjectured, from the present scarcity of labourers to carry on the works going forward, though they are so well paid; but this is from the canals, I think, &c. which take off so great a number of men.

WAGES.

The rate of wages, and the price of labour, are very much advanced. Wages for a tolerably expert husbandman, are risen from 5 or 6l. per annum, to 8, 9, and 10l. per annum. The price of daily labour is risen from 8d. to 1s. and to 1s. 6d. now, in this county in general. In summer time labourers work from six in the morning until the hour of six in the evening; and so at all times of the year when the light will admit. In the winter season, their labour is governed by the length of the day.

DRAINING.

Too little attention has been paid to this useful practice. Open drains of the width of 9 or 10 feet, (in some places more) are commonly used in the lower or marshy lands, with small gutters falling thereto from the surface of the lands.

HOLLOW

HOLLOW DITCHING,

Were it attended to, would contribute greatly to the im-
ovement of the country, particularly upon the cultivated
rts of the sides of the mountains, where the soil, by its
ycy nature, is retentive of water. One gentleman has
formed me, he has improved his estate greatly by this lau-
ble practice, and is in value nearly double to what it was
me few years ago.

PARING *and* BURNING,

In the hilly parts of the county, are to a small degree prac-
ed, and are found to answer the farmer's expectation
henever adopted upon lands having abundance of heath
on them, the roughest parts of which, it may be well to
duce to ashes and spread over the lands ; but where the soil
thin it is certainly injurious. It may give a crop for a
ar or two, but after it will give very little produce, but that
poor hungry weeds.

WOODS.

There is certainly a great deal of fine oak timber upon
redegar and other estates. The country is well wooded;
d also coppice woods, which are in general cut when of the
owth of eleven years, or from that to fourteen. Willows
anted in wet spaces are cut at three years and found very
ofitable and useful to make hurdles, &c.

PROVISIONS.

The price varies according to the seasons, in general it
ns as follows:

Wheat, from 7s. to 9s. 6d. per bushel of 10 gallons or
80lb. weight.

Barley, from 3s. 6d. to 4s. ditto.

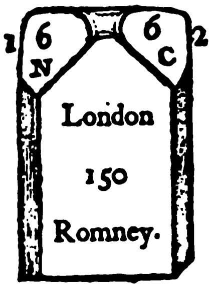
Oats, from 2s. to 3s. ditto.

Beef, from 2½d. to 5d. per lb.
Mutton, from 3d. to 5d. per lb.
Pork, from 3d. to 5d. per lb.
Bacon, from 3d. to 4½d. per lb.
Cheese, from 4d. to 5d. and 6d. per lb.
Butter, from 6d. to 10d.

These prices of wheat, &c. are too high for the poor labourer, and therefore some means should be adopted to reduce the prices.

ROADS.

The roads, both parochial and public, are capable of much improvement; in some parts they are infamously bad. Materials are for the most part near at hand, and an equal discharge of the statute duty would, I conceive, in most places amend, with the aid of the turnpike trusts, every defect. The mile-stones on the turnpike-road from Newport to Cardiff are the best devised that I ever met with, insomuch that I think a rough draught of one necessary, that the usage of such may be made more general. Upon some roads these useful guides are rendered quite obscure and useless.



No. 1. contains the distance from the town left.
2. The distance from that to which you are going.
N, for Newport. C, for Cardiff.
The centre explains itself.
The foot contains the pariſh in which the stone stands*.

BUILDINGS.

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* The pattern of these mile-stones was brought from England, I understand, by the Rev. Mr. Leyson, vicar of Bassaley, near Tredegar, to whom much merit is due for his attention to this very useful appendage to the turnpike roads, which, as well as direction-posts, are a great convenience to travellers, especially to strangers.

BUILDINGS.

Perfect plans upon the least expensive scale, are much wanting for the improvement of farm houses and their offices; sheds, in many farm yards are wanted, to shelter the cattle, &c. The comfort of the cottager also requires particular attention; his abode too frequently exhibiting a desolation that exposes him and his family to the inclemency of the weather. But this grievance promises to be very amply redressed, by the humane exertions of the principal proprietors of the county, who have a desire, I with pleasure observe, to promote the happiness of this industrious, and I think, generally virtuous class of society, the poor peasant and his family.

LEASES.

Leases for fair periods of time are liberally granted by proprietors, to deserving tenants. Twenty-one years is the most general and usual term granted. There are however, several astates held by tenancy at will, and some few by lease, but the latter tenure is getting out of practice, I think, very properly.

There is a great deal of copyhold tenure in this county; in some cases the fines extending to two years and an half upon the rack rents, must certainly operate as a check upon improvements. This may become an object well worthy of the attention of the Board of Agriculture to cause to be meliorated, in a way that is equitable, and worthy the attention of Parliament.

Influence of COMMERCE upon AGRICULTURE.

The confined extent in which commerce and manufactures have hitherto been carried on in this county, doth not afford sufficient data to state their influence upon the Agriculture: but so far as the general principle upon this subject strikes the writer as applicable to this county, he thinks that commerce and staple manufactures powerfully promote the best interests of Agriculture. The ship could not sail if the ground gave not the hemp, and the timber with the iron bolts to put the ship together; nor could the farmer pay his rent, if population, trade, and manufactures, in consequence did not consume the produce of his farm. Thus we see a chain that combines agriculture and commerce together.

In the course of a short time provincial proof will be given upon this subject. As coals and iron, with wares of different kinds produced from this useful metal, promise to become staple articles of commerce by means of canals to the navigable rivers and sea, commerce and agriculture will go hand in hand, and mutually assist and help each other.

AGRICULTURAL SOCIETY.

A society for the improvement of this science hath lately been established in this county; it is found already to be beneficial altho' it be in its infancy. Whatever tends to regulate, serves science.—The order of society secures and comforts it.

THE DISPOSITION FOR IMPROVEMENT.

This prevails, particularly among the tenantry of those numerous respectable proprietors within this county, whose moral character and active exertions equally benefit those around them.

The yeomanry seem generally well disposed to receive, and profit by instruction.—Therefore the introduction of better breeds of cattle, and more improved courses of husbandry, will prove a general benefit to the county. I have observed some excellent crops of turnips; and that this, and the most useful root, potatoes, are more and more cultivated I find every year, to the benefit of the kingdom in general.

POTATOES.

I am persuaded, both from general observation, as well as experience, too much cannot be said to excite the attention of all ranks of people to cultivate this nutritive esculent, upon as large a scale as the dung they are possessed of, to plant them upon, will admit. It is by far the best mode of putting the manure into the earth, and the potatoes being planted in rows at about three feet apart, gives an opportunity of hoeing and making the land clean of weeds, and produces a crop nearly equal, and indeed often superior to most others, besides being the best preparative for wheat or barley. The early sort may be got out in time for the former, and the late potatoes for the latter. I had some barley last year sown after potatoes, by the Rev. Mr. Cook's Drill machine, was 3 inches and a quarter in the ear, and remarkably fine plump grain; when a great deal in the same parish was very poor and sterile, from the hot summer, the want of hoeing, and being sown too thick, which is a great error and too often practiced.

SMALL FARMS.

The general cultivation of this county seems the soundest reasoning in favor of small farms. They promote plenty, population, and industry, and prevent monopoly, by constantly supplying the markets.

I do not mean, by this approbation of small farms, to withhold praise from some larger ones; they are equally serviceable, if not too large and numerous in every county. These afford space for useful experimental improvements, preserve the quantity of corn necessary for the exigencies of the county, and contribute much to improve the live stock, by procuring some of the best sorts to breed from; therefore both have their respective uses if kept in due proportion.

COMMONS.

The quantity of rich land lying in commons on the marshes is very considerable. Greenmore, it is supposed, contains about 500 acres, Caldecott about 800 acres, these are the two principal commons. There are several other commons, some of them extensive tracts, lying near to the town of Monmouth, in the way to Chepstow, that might be converted into fine arable and pasture land if inclosed; and also upon the hills there is much waste land, to the amount of many thousand acres, that some parts of, at least, might be brought into a state of cultivation, and become much more beneficial, being at present in a state of nature.

NEWPORT CANAL.

This valuable canal has two branches, that divide at rather less than a mile above Newport, and go up to very extensive collieries* and iron works erected in situations where coal and iron stone is to be had in great abundance, for the purpose of making this valuable staple article of iron upon the line of this canal.

It will also bring down coal in such great abundance from Pontipool, &c. of so excellent a quality, to the sea port town of Newport and the neighbouring country, as will in a short time after the canal is finished, and the veins are properly opened, become a great object of export from thence to different parts (probably even to the Metropolis) if the canal from Bridgewater through Somersetshire and Dorsetshire, designed for vessels of 300 tons burthen, ſhould be carried into execution.

This canal will also supply the internal part of the country with this necessary article of comfort. Each of the two branches beforementioned extends more than 10 miles, and the whole of the rail road, are upwards of 24 miles. The iron works of *Blaen-avon*, consisting of *three furnaces*, are carried on with great spirit, by Mess. Hill and Co. and has a rail road for more than *five miles*, to bring the iron down to the head of the canal. For this, and for other works carried on by different proprietors, there is much merit due to them, they having expended very large ſums in the eſtablishment of these capital works, which will produce many thousand tons of iron annually, for the consumption of this country, and assist much in preventing the importation of such immense quantities of iron as we have been obliged to introduce from Sweden and Russia, to the prejudice of that balance of trade which it is the dignity and interest of Great-Britain to preserve.

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* It is supposed that 300,000 tons of coal may be in a little time raised and brought down by the canal to be shipped off to supply thoſe places that are in want of this coal, which is of a moſt excellent quality.

IRON WORKS.

The valley of Tintern, in which there is such abundance of coppices, and of wood grown, enables the proprietor of the iron works there, to make some of the best and toughest iron in the kingdom, for the purpose of making tin plates and wire. This is made chiefly from the red iron ore, brought from the Ulverstone river, in Lancashire, up the Wye to Chepstow; and is of so superior a quality, that the iron pigs sell from 8l. to 8l. 5s. per ton, and when they are worked out into rods, to make wire, &c. are worth 32l. a ton. Thus is the value enhanced by the use of coals and labour, and still further to a much greater extent, when made into tin plates and wire, for which there is so great, I may say almost an unlimited demand.

The pig iron in the other extensive works, I understand sells only for from 5l. 5s. to 6l. 10s. being made with the iron stone of this country by means of *coaked coal.* This shews the utility of extending plantations of woods and coppices upon the sides of the hills, and in spaces at present nculcivated; that the manufacture of charcoal may be in-reased, and consequently a supply of this excellent tough ron furnished equivalent to the great demand for it.

TYTHES

Are very unequally paid in this county, and the present node of collecting them in kind throughout many parishes, isturbs the harmony of society, and checks agricultural mprovements. A respectable gentleman of landed property, vho told me he had a turn for that pleasing employment nd healthy amusement of farming, and had been holding ome part of his estate in his own hands, gave it up and let t all because he would not be subject to have a dispute with he clergyman of the parish taking the tythe in kind, upon is not agreeing to pay the advance made in paying per acre, o much more than formerly. I must observe at the same ime, that upon the large estates of a noble duke in this ounty, I heard no complaint made in the mode of the payment made for the great tythes; instead of taking them in kind, there was a commutation settled in a moderate way, so s to give content. In the northern part of the county, s. 6d. per acre is I find, only paid for the tythe of wheat in some places; while in the southern district, I have been informed, the tythe has been raised for the same article, from 6s. to 12s. per acre.

This subject has been so copiously treated, and so successfully too, I have no doubt, by others, that nothing new remains to be said upon it. If the wisdom of parliament perceives it necessary to consider it, the clergy and laity must benefit by the regulations of this very important object; and my most earnest wishes are that it may be attended with the desired success.

IMPROVEMENTS.

MOOR LAND.

uch of the moor land that is wet and rushy, might be y improved by a proper canal, or drain, with a due in- tion, and so formed as to run parallel with the bottom e hills.—By this measure the main body of the water descends in torrents from the upper country, would be ed off to the river below Newport, and be prevented floating so many acres of that fine rich meadow land.

COMMONS,

this county, by the general luxuriance of the soil, are sily converted to agricultural purposes, that inclosures l of them ſhould take place, to the great benefit of the ic; and this a general inclosing bill would much tate.

ROADS.

s labourers are so scarce, I have often considered, that ancient Roman rule of employing their soldiers in re- ng roads, and other works of public utility, might be is time, as it was formerly, advantageously adopted in is kingdom. If these poor men were allowed by their nanding Officers, to work two or three days in each , or so many hours in the day in good weather, as ld procure them an addition to their pay, they would be ered more happy, healthy, temperate, and expert in duty. The Inn-Keepers would hereby also have some valent for the burthen that they sustain in quartering these ul subjects; as the profit derived from the labor of the iers, would in part be layed out with the Inn-Keepers for a comforts in life, which the smallness of their pay does ot procure them at present, this being fixed when provisions vere at a much lower price.

There was a large body of new raised troops brought from reland, that were quartered lately in this county, at the rincipal different towns. Many of these men might have een employed to great benefit to the public, themselves, and nn-keepers, had they been permitted to work upon the roads, r do any other business, which would have kept them out of dleness and mischief. One gentleman told me he would ave employed 50 of them himself, could he have had them o work for him; and many might have been taken to work pon the roads, which are very bad indeed, at a small listance from where they were quartered.

As a contrast, I beg leave to mention, that the Colonel of body of Militia, (I think the South Devon,) last year permitted his men to work so many days in the week, when the weather was good, or so many hours in the day, upon the ublic roads. Those men that had been bred to husbandry, nd had no trade to follow, put on a jacket and trowsers, nd chearfully turned out to this employment. The roads were made good, the men were regular and orderly by being mployed, and made such an addition hereby to their pay, hat their quarters were well paid, and the men so respected, hat the people of the towns where they were quartered, made a subscription to give them a good dinner at Christmas; and when they were ordered away, regretted their departure. It is to be deplored, that so large a body of men at present embodied, ſhould not be employed to repair the roads, or in levelling lands, building sea walls, and repairing some that much want it.

SHIP

SHIP BUILDING.

The contiguity of Chepstow to *the Forest of Dean*, and the very convenient docks belonging to Mess. Buckle and Co. and others of that town, united with their distinguished skill in the art of ship building, inclines me to submit to government the propriety of there being commissions given for building ships of war, frigates, sloops, transports, or victualling vessels, at this port. The course of such vessels, when finished, to the port of Cork, or Waterford, to take in stores, would be direct, safe, and expeditious, and would hereby, I conceive, very much facilitate the purpose of government, in time of war. A fine vessel, called the Gloucester, was lately launched, built there for Mess. Cook, Sadler, and Stock, merchants in the Oporto Trade.

OZIERS.

The growth of this useful coppice wood along the banks of the several rivers, and in other places also, should be encouraged, as it gives strength to the banks, and makes them very profitable. The author, to whose valuable work the public is so much indebted for the account of Persefield, inserted in the Appendix, gives some such useful instructions for the management of the ozier, that I shall take the liberty to transcribe them:—" The ozier stands first as a coppice wood, whether it be cut annually for the use of the basket makers, or be suffered to stand three, four, five, or a greater number of years, for the purposes of withs, hurdles, edders, stakes, rake-handles, other implements of husbandry, or poles of almost any length or dimensions.

" Notwithstanding the ozier is usually planted near water, we have good reason to believe it affects a dry situation: this we know, that it will not flourish in water, that is when water has a constant communication with its roots. The places it most delights in are drained moors and the banks of large rivers, both of which are peculiarly dry situations; it has no dislike, however, to being flooded occasionally, but seems rather to be invigorated by such Irrigation; therefore, the sand-banks which we frequently see thrown up by the sides of rivers, and which sometimes lie for half a century before they become profitable, are peculiarly eligible to be converted into ozier grounds. The method of planting an ozier ground is this:—The soil being laid perfectly dry, and its surface made thoroughly clean, cuttings of the second or third year's growth, and about twelve inches long, are planted in drills, about two feet and a half asunder, in the month of March. The cuttings ought to be thrust seven or eight inches deep, leaving four or five inches of head above ground.

"The intervals must be kept stirred with a small plough or hoe*, as the first year a crop of potatoes may be taken; the drills in either case must be kept perfectly clean with the hand hoe, and at the approach of winter the intervals must be split, and the mould thrown to the roots of the young plants, in order to lay them dry and warm during the winter.

"In spring it will be well to trim off the first year's shoots (though not necessary) and replace the plants which have failed, with fresh cuttings. The second summer the intervals must be kept stirred, the drills hoed, and the plants earthed up, as before, against winter.

"The ensuing Spring the stools must again be cleared, although the twigs as yet will be of little value; but the third cutting they will produce marketable ware, and will increase in quantity and value, until the profits arising from them will be almost incredible. In situations which the ozier affects, and in countries where the twigs are in demand, Ozier Grounds have been known to pay an annual rent of 10 l. an acre!.

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* That invented by Mr. Dougall, in Windmill-Street, London, is a very proper one.

! Under ordinary circumstances, they will, if properly
aged, pay four or five.

I have previously mentioned how valuable the common
ow is found to be, which may be planted in such wet
s and patches of land, where nothing but reeds and rushes
des will grow, except, I must say, some other aquatics
are also useful."

THE PEASANTRY.

rom the great advance in the price of provisions and ne-
aries of life, it is evident how difficult it must be for this
ription of persons to support themselves and families, by
small wages that are generally allowed to them in some
s of this, and other counties I have been lately in. The
ent with which they bear the calamities of their present
, render them, in a peculiar manner, the objects of
lic attention; and will, I am persuaded, plead more pow-
lly in their favor, than the most florid arguments that can
rged for them, as I could be glad to do all in my power
eir behalf.

he distresses of many of these people are neither brought
y licentiousness, or produced by indolence; they simply
e from the difficulties they must encounter in maintaining
nselves, their wives (and often large families) in comfort,
what they earn, notwithstanding their labours are
n dawn to night, and many of them sober, discreet, and
strious, and I may add, their lives and conduct almost
proachable.

uch praise is due to Mr. Salusbury, the member for this
nty, for the encouragement he has given to build cottages
the road side, for the accommodation of poor married
n and their families; and permitting them to annex thereto
nall slip of land, the cultivation of which, by supplying
atoes and other garden stuff for the occupier and his
ily, will be a considerable alleviation of their present distresses;

treſſes; and were this plan to be adopted in every pariſh, would tend much to encreaſe their comfort and leſſen the poor's rates.

COTTING of SHEEP,

Is a practice, where it can be conveniently adopted, to afford theſe animals, as well as cattle, a ſhelter from the ſtorm in very wet and ſevere weather, that would be found of great utility.—Upon this being mentioned to one of the moſt conſiderable and reſpectable gentlemen farmers of this county, he very frankly approved of the meaſure; and ſaid he had no doubt this practiſe would be the means of thouſands of theſe valuable animals being preſerved from dying of the rot in low ſituations, and ſtarved upon the mountains in ſevere weather. I have an intention to get an experiment made, in imitation, in ſome degree, of what has been already adapted by a worthy Cumberland Baronet, who made a trial upon a ſmall ſcale, and found it fully anſwer his expectation. I know the expence will be the objection with many of the farmers; but if the lives of ſo many of theſe poor creatures are preſerved by the meaſure, ſo as to overbalance greatly the expence, will it not be worth while for them to adopt a plan ſo replete with advantage and humanity?

SEA WALLS,

In the hundreds of Wentlooge and Caldecot, have been erected for a conſiderable extent, and at a vaſt expenſe, to keep off the ſea at high tides and in ſtormy weather, when the wind is at S. W. otherwiſe the ravages would be at times very great, by the inundations that would be made upon this large tract of moory land.

Some of theſe walls are admirably built, to the height of 12 to 14 feet, and by a gradual ſlope falling back from the ſea, faced with ſtone, each row of ſtones falling back about two inches in every foot, having a ſpacious embankment of h behind the stone work.—This medium of slope is ıd to answer best.

ı other parts where the walls are not so high, I observed e of them made of a large embankment of earth only, yet more sloping on each side, so as to leave only a nar- path at the top.—These being thrown up in moist wea- , are covered with sods about a foot thick, which are ıd to be much better than those that are thinner, the grass s having more strength. The earth of the bank not g made too smooth and close behind the sod, they soon ere, and soon become an excellent fence to keep off the Some that had been formed too perpendicular, I ob- ed, had received much damage by the late violent gales, were repairing. A number of men were employed, and e were wanted: they could not get a sufficient number gh the wages was 1s. 6d. per day.

DIBLING and DRILLING of GRAIN.

his beneficial mode is as yet practised but little in this ıty. Mr. Salusbury has permitted an essay to be made small scale, it is hoped it will be more generally attended for the grain being then put in the earth in rows, at a distance as to hoe between them in the spaces, weeds are destroyed in the early growth, and the air dew let into the roots of the plants at the time the earth ound up in the Spring, which often happens, particularly ıe wheat, in the month of March, &c.

he saving of the seed by either of these methods is very t; dibling I would prefer, if a sufficient number of hands be obtained, as it employs the poor women and children, perhaps are idle; and the saving of seed is so great, as ay more than the expence; and dibling can be practised ands where drilling cannot.

By the experience obtain'd the last hot summer, of the su- eriority of the crops that were dibled, or drilled and hoed, is to be hoped, that this very advantageous improved prac- ice will be adopted by every gentleman, who by setting the xample, will be the means to shew the benefit arising to his enants, so as to bring this beneficial practice, in a few years, nto general use. It is not in my power to point out he extraordinary benefits that will arise to those who vill put this salutary practice into execution, so as o shew the wonderful utility, which I must beg leave o observe, I think is the greatest in all agricultural mprovements.

FRIENDLY SOCIETIES.

There are two of these useful bodies of people established t Caerleon, and one at Newport; besides several others in ifferent parts of the county.

The members pay from one shilling to fifteen pence per onth. In cases of sickness, they will receive from five hillings to seven shillings a week, after they have con- ributed one year to the fund.

In case of death, when the stock amounts to sixty pounds, he widow will have a claim of five pounds upon it.

One of these clubs has been established for more than hese fifty years past; and after having paid all demands upon them, have a balance of near 200l. in hand. The other has nearly the same sum; so that both are so established there is no doubt of their being able to pay all demands upon them.

Besides paying two-pence or three-pence a week to the general stock, they spend two-pence or three-pence once a month.

There have been about 20 of them passed examination before the justices, agreeable to the late act of parliament, and several more are now ready to do the like, at the next ing of the juſtices for this purpoſe. Theſe ſocieties ſtill encreaſing in number, and ſome of the moſt reſ- able gentlemen in the county are ſo good as to permit names to be enrolled among them, which gives them oper countenance by their patronage and kind ſupport.

GREEN CROPS,

ill, I have no doubt, be raiſed more and more every from the benefit that has been found to ariſe from the ing of them.

urnips, rape, rye, and vetches, for ſpring food;— ges, and the turnip rooted cabbage, may, and I truſt be attended to, by every gentleman and improving far- who will not only find much benefit ariſe to himſelf their uſe, but will alſo have great ſatisfaction in being neans to make a proper communication to thoſe of his hbours who may be timid in making experiments them- s, but, when they find that ſuch methods have been and are found to anſwer, will readily follow the ex- e ſet by thoſe in ſuperior ſtations in life.

CONCLUSION.

cannot cloſe this report without expreſſing the obli- ns I am under to the various reſpectable gentlemen and proprietors, and their tenants, in the county, to whom I ied for information.

heir general attachment, I with much pleaſure re- ked, to our happy government in church and ſtate, was ardently evinced by their general readiness to comply with its wishes.

Their intelligence threw light upon every enquiry; and frequently suggeſted considerations, which otherwise might have passed unobserved.

APPENDIX.

APPENDIX

TO THE

AGRICULTURAL ACCOUNT

OF

MONMOUTHSHIRE.

APPENDIX.

PTION OF PERSEFIELD, FROM A PRACTICAL TREATISE ON NTING AND ORNAMENTAL GARDENING, PUBLISHED BY DODSLEY, IN 1788.

SEFIELD is situated upon the banks of the river Wye, which divides
ershire and Monmouthshire, and which was formerly the boundary be-
ngland and Wales.
eneral tendency of the river is from North to South; but about Persefield
es by its winding course, the letter S somewhat compressed, so as to re-
length and increase its width. The grounds of Persefield are lifted high
bed of the river, shelving, and form the brink of a lofty and steep pre-
wards the South West.
ower limb of the letter is filled with perse wood, which makes a part of
; but is at present an impenetrable thicket of coppice wood. This dips
uth East down to the water's edge; and seen from the top of the opposite
a good effect. The upper limb receives the farms of Llancot, rich and
ultivated, broken into inclosures, and scattered with groups and single
vo well-looking farm houses in the centre, and a neat white chapel on
altogether form a little lovely paradisaical spot. The lowliness of its
stamps it with an air of meekness and humility; and the natural barriers
rround it, add those of peacefulness and security. These picturesque
not form a low flat bottom, subject to be overflowed by the river, but
form of a gorget, rising fullest in the middle, and falling on every side
the brink of the Wye; except on the East side, where the top of the
gorget

gorget leans in an easy manner against a range of perpendicular rock, as i
shew its disk with advantage to the walks of Persefield.

This rock stretches across what may be called the Isthmus, leaving only a
row pass down into the fields of Llancot, and joins the principal range of r
at the lower bend of the river. To the North, at the head of the letter, st
an immense rock, (or rather a pile of immense rocks, one above another) c
Windcliff; the top of which is elevated as much above the grounds of Pers
as those are above the fields of Llancot.

These several rocks, with the wooded precipices on the side of Perse
form a circular inclosure about a mile in diameter, including Perse Wood, L
cot, the Wye, and a small meadow lying at the foot of Windcliff.

The grounds are divided into the upper and lower lawn. by the appr
to the house, (the old house has since been pulled down and rebuilt nearly by
Smith, upon an elegant modern plan) a small irregular building standing nea
brink of the precipice, but facing down the lower lawn: a beautiful gro
falling "precipitately every way into a valley which shelves down in the mid
and is scattered with groups and single trees in an excellent style.

The view from the house is soft, rich, and beautifully picturesque; the
and woods of Persefield and the opposite banks of the river,—the Wye nea
mouth winding through "meadows green as emerald" in a manner pecul
graceful;—the Severn here very broad, backed by the wooded and highly c
vated hills of Gloucestershire, Wiltshire, and Somersetshire. Not one rock
ters into the composition; the whole view consists of an elegant arrangeme
lawn, wood, and water.

The upper lawn is a less beautiful ground, and the view from it, thoug
commands the "cultivated hills and the rich vallies of Monmouthshire," bou
by the Severn and backed by the Mendip Hills, is much inferior to that fron
house.

To give variety to the views from Persefield, to disclose the native gran
which surrounds it, and to set off its most striking features to advantage, w
have been cut through the woods and on the face of the precipice, which b
the grounds to the South and East. The viewer enters these walks at the l
corner of the lower lawn.

The first point of view is marked by an alcove, from which are seen the b
and town of Chepstow, with its castle, situated in a remarkable manner o
very brink of a perpendicular rock washed by the Wye; and beyond thes
Severn shews a small portion of its silvery surface.

Proceeding a little further along the walk, a view is caught which the pa
might call a complete landscape. The castle, with the serpentine part of
Wye below; Chepstow, intermixed in a peculiar manner with the broad w
of the Severn, form the fore ground, which is backed by distant hills; the
crowned with wood, lying between the alcove and the Castle, to the right:
Castle-Hill farm, elevated upon the opposite banks of the river to the left,

side scenes. This point is not marked, and must frequently be left to
ger.

Grotto, situated at the head of Perse-Wood, commands a near view of
site rocks, magnificent beyond description ! The littleness of human art
er placed in a more humiliating point of view. The Castle of Chepstow,
rtress, is, compared with these natural bulwarks, a mere *house of cards.*
e Grotto, upon the Isthmus of the Persefield, is a shrubbery, strangely
d ! an unpardonable intrusion upon the native grandeur of this scene.
pin's observations upon this, as upon every other occasion, are very just.
, " It is pity the ingenious embellisher of these scenes could not have been
with the great beauties of nature which he commanded. The shrub-
e has introduced in this part of his improvements, I fear will rather be
paltry. It is not the shrub which offends, it is the formal intro-
of it. Wild underwood may be an appendage of the grandest scene ; it
autiful appendage. A bed of violets or of lilies may enamel the ground
priety at the foot of an oak ; but if you introduce them artificially in a
ou introduce a trifling formality, and disgrace the noble object you wish
."—(Gilpin on the Wye, p. 42.)

alk now leaves the wood, and opens upon the lower lawn, until coming
house, it enters the alarming precipice facing Llancot ; winding along
of it in a manner which does great honour to the artist. Sometimes the
ts of rock which fall in its way are avoided ; at other times partially re-
so as to conduct the path along a ledge carved out of the rock ; and in
ance a huge fragment, of a somewhat conical shape, and many yards
perforated, the path leading through its base. This is a thought which
d down to future times the greatness of the late owner's taste. The de-
the execution are equally great,—not a mark of a tool to be seen ; all
perfectly natural. The arch-way is made winding, so that on the ap-
it appears to be the mouth of a cave, and on a nearer view the idea is
ened by an allowable deception,—a black dark hole on the side next the
ich seen from the entrance, before the perforation is discovered, appears
darksome inlet into the body of the cave.

this point that vast inclosure of rocks and precipices which marks the
magnificence of Persefield, is seen to advantage. The area, containing
oint of view the fields of Llancot and the lower margin of Perse-Wood,
n in a manner peculiarly picturesque, by the graceful winding of the Wye,
shing a low grassy shore, and there sweeping at the foot of the rocks,
ise in some places perpendicular from the water ; but in general they have
d offset from the base, above which they rise to one, two, or perhaps three
hundred feet high ; exposing one full face, silvered by age and bearded
, growing out of the wrinkle like seams and fissures. If one might be al-
compare the paltry performances of art with the magnificent works of
we should say, that this inclosure resembles a prodigious fortress which

has been long in ruins. It is in reality one of nature's strong holds, and as
has probably been frequently made use of.

Across the Isthmus, on the Gloucestershire side, there are the remains
deep intrenchment, called to this day, the bulwark; and tradition still teems
the extraordinary warlike feats that have been performed among this rom
scenery.

From the perforated rock the walk leads down to the cold bath (a com
place) seated about the mid way of the precipice, in this part less steep; and
the cold bath a rough path winds down to the meadow by the side of the
from whence the precipice on the Persefield side is seen with every advantag
giant fragments hung with shrubs and ivy, rise in a ghastly manner from am
the underwood, and shew themselves in all their native savageness.

There is another way down into this meadow, a kind of winding stai
furrowed out of the face of the precipice behind the house, and leading down
a walk made on the side of the river; but being at present out of repair, th
ſcent this way is rendered very difficult, and somewhat dangerous.

From the cold bath upward, a coach road (very steep and difficult) le
the top of the cliff, at the upper corner of the upper lawn; near the top o
road is a point which commands one of the most pleasing views of Pers
The Wye sweeping through a glassy vale, which opens to the left—Ll
backed by its rocks, with the Severn immediately behind them,—and seen i
point of view, seems to be divided from the Wye, by only a sharp ridge of
with a precipice on either side, and behind the Severn the vale and woode
of Gloucestershire.

From this place a road leads to the top of Wind-cliff.—Astonishing sig
The face of nature probably affords not a more magnificent scene! Llan
all its grandeur; the grounds of Persefield; the castle and town of Cheps
the graceful windings of the Wye below, and its conflux with the Severn;
left, the forest of Dean; to the right, the rich marshes and picturesque mou
of South Wales; a broad view of the Severn opening its sea like m
the conflux of the Avon, with merchants ships at anchor in King Road,
vessels of different descriptions under sail; Aust Cliff, and the whole va
Berkley, backed by the wooded swells of Gloucestershire; the view termi
in clouds of distant hills rising one behind another, until the eye becomes u
to distinguish the earth's billowy surface from the clouds themselves.

The waters of the Severn and Wye being principals in these views, and
subject to the ebbings and flowings of the tide, which at the bridge of Chep
rises to the almost incredible height of 40 or 50 feet, it follows that the
of spring tide, and high water, is the properest time for going over Persefield

The leading principle of the proposed improvement would be to separa
sublime from the *beautiful*; so that in viewing the one, the eye might not so
as suspect that the other was near.

Let the *hanging walk* be conducted entirely along the precipices, or th
the thickets, so as to disclose the natural scenery, without once discoveri

r any other acquired softness. Let the path be as rude as if trodden only
l beasts, and savages; and the resting places, if any, as rustic as possible.
e entirely the present shrubbery, and lay out another as elegant as nature
could render it, before the house, swelling it out into the lawn, towards
bles; between which and the kitchen garden make a narrow winding
e.

vert the upper lawn into a deer paddock, suffering it to run as wild, rough,
est like, as total negligence would render it.

viewer would then be thus conducted: He would enter the hanging walk
questered path, at the lower corner of the lawn, pursuing it through the
o beneath the grotto, and round the head land, or winding through Perse
to the perforated rock and the cold bath, without once conceiving an
possible, that art or at least that much art had been made use of in dis-
the natural grandeur of the surrounding objects, which ought to appear
ey presented themselves to his view, or at most as if nothing was wanted
own penetration and judgment to find them out. The walk should
re be conducted in such a manner, that the breaks might be quite natural,
points of view obvious, or requiring nothing but a block or a stone to
hem. A stranger at least, wants no seat here; he is too eager in the early
his walk, to think of lounging upon a bench.

n the cold bath he would ascend the steep, near the top of which a com-
s bench or benches, might be placed: the fatigue of ascending the hill
require a resting place, and there are few points which afford a more
g view than this; it is grand without being too broad and glaring.

n these benches he would enter the forest part.—Here the idea of nature
primitive state would be strengthened, the roughness and deer to the right,
rocks in all their native wildness, to the left. Even Llancot might be
t from the view, by the natural shrubbery of the cliff. The lover's leap,
er, a tremendous peep, might remain; but no benches, nor other work of
uld here be seen. A natural path, deviating near the brink of the pre-
would bring the viewer down to the lower corner of the park, where
s should be placed in a happy point, so as to give a full view of the rocks
tive wildnesses, and at the same time hide the farm houses, fields, and other
d beauties of Llancot.

ing satiated himself with this savage scene, he would be led by a still
path, through the labyrinth, when the shrubbery, the lawn with all its
ages, the graceful Wye, and the broad silver Severn, would break upon
, with every advantage of ornamented nature.—The transition could not
strike.

n this soft scene he would be shewn to the top of Wind Cliff, where
vast view he would unite the sublime and beautiful Persefield.

various valuable information contained in the work from which the
ng account of Persefield is extracted, will render it a desirable acquisition
library of every botanical and agricultural inquirer.

FINIS.

GENERAL VIEW

OF THE

AGRICULTURE

OF THE NORTH RIDING OF

YORKSHIRE.

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[illegible]

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GENERAL VIEW

OF THE

AGRICULTURE

OF THE NORTH RIDING OF

YORKSHIRE,

WITH OBSERVATIONS ON THE MEANS OF ITS IMPROVEM

BY MR. TUKE, JUNIOR,
LINGCROFT, NEAR YORK.

Gt. Brit
DRAWN UP FOR THE CONSIDERATION OF THE BOARD OF AGRICULTURE
INTERNAL IMPROVEMENT.

LONDON:
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ADVERTISEMENT.

THE following valuable communication, respecting the
sent state of Husbandry in the North Riding of Yorkshire,
the means of its improvement, drawn up for the considera
of the Board of Agriculture, is now printed, merely for
purpose of its being circulated there, in order that e
person interested in the welfare of that county, may h
it in his power, to examine it fully, before it is published.
is therefore requested, that any remark, or additional ob
vation, which may occur to the reader, on the perusal
the following sheets, *may be written on the margin*, and tra
mitted to the Board of Agriculture, at its office in Lond
by whom the same shall be properly attended to; and w
the returns are completed, an account will be drawn up
the state of agriculture in the North Riding, from the infor
tion thus accumulated, which, it is believed, will be found gre
superior to any thing of the kind ever yet made public.

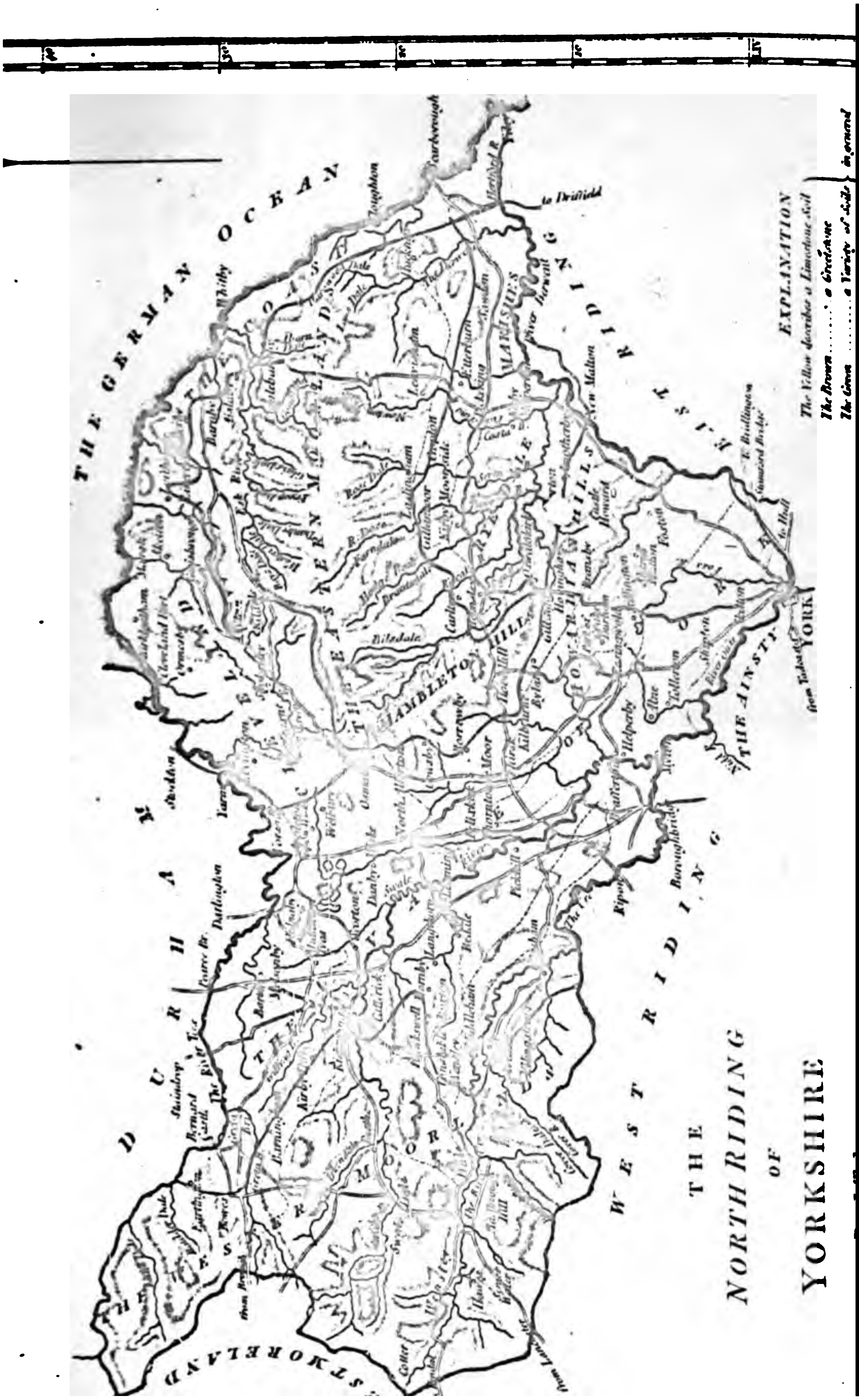
The Board has adopted the same plan, in regard to all
other counties in the united kingdom; and, it is hardly
cessary to add, will be happy to give every assistance in
power, to any person, who may be desirous of improving
breed of cattle, sheep, &c. or of trying any useful experi

TO THE READER.

IT is requested, that this Paper may be returned to the Board of Agriculture, as soon as may be convenient.

It is hardly necessary to add, that the Board does not consider itself responsible, for any fact or observation contained in these Reports, which, at present, are printed and circulated, for the purpose merely of procuring additional information, and of enabling every one, to contribute his mite, to the improvement of his country.

February, 1794.



THE
NORTH RIDING
OF
YORKSHIRE

EXPLANATION

The Yellow describes a Limestone Soil
The Brown ..... a Gritstone
The Green ..... a Variety of Soils } in general

INTRODUCTION.

THE North Riding of the County of York is situated between 53° 57′ and 54° 38′ north latitude, and between 0° 19′ and 2° 23′ west longitude of Greenwich. It is bounded by the county of Durham on the north, the German ocean on the north-east, the East Riding on the south-east, the Ainsty of York and the West Riding on the south, and the county of Westmorcland on the west, as the map hereto annexed will sufficiently shew. The length of the Riding from east to west, is 83 miles, the breadth from north to south 47 miles, and it contains about 2048 $\frac{71}{100}$ square miles, or 1,311,187 acres; of these about 442,565 are uncultivated; the remainder comprehends the inclosed lands, the open fields, the woods, and the roads.

As the climate, soil, and face of the country are very various, I have divided the whole into the following districts, and annexed the quantity of acres in each.

	Cultivated acres.	Uncultivated acres.
The Coast - - -	64,920	
Cleveland - - - -	70,444	
The Vale of York, with the Howardian hills, &c.	441,386	15,000
Ryedale, with the east and west Marishes -	100,437	3435
The eastern Moorlands - -	102,000	196,625
Western ditto - - -	90,000	226,940
	869,187	442,000

Total quantity of the North Riding, 1,311,187 acres.

Rivers.——The rivers and streams (provincially becks) of this district are very numerous; in consequence of so large a part of the Riding consisting of a very elevated country, penetrated in almost every direction by vallies, each of which possesses its stream.

The principal of these is, first, the Tees, which rises between the counties of Westmoreland and Durham, beyond the north-west extremity of this Riding, and taking an easterly direction, divides it from the county of Durham through its whole extent, and is navigable for vessels of 30 tons, from the ocean to Yarm, where the tide rises about feet.

The Ure rises near the borders of Westmoreland, and collecting, during its course through the beautiful dale of Wensley, many tributary streams, flows for many miles, with a very rapid current within the North Riding; but about three miles below Masham, becomes the boundary of this Riding, dividing it from the West Riding, till it arrives at Ripon; from whence it takes a circuit of a few miles into the West Riding, but again becomes the division between the two, and so continues as long as it retains its name; this it loses about six miles below Boroughbridge, at the influx of an insignificant stream, that gives to the great river Ure its own name of Ouse, which at last, in its turn, is lost in that of the Humber. The Ouse continues to be the boundary of the North Riding, dividing it from the West Riding and the Ainsty of the city of York, till its arrival at York, where it entirely quits the North Riding. The Ouse is navigable for vessels of 120 tons as far as York, where the spring tides rise about 20 inches, but are spent about six miles above. The Ure is navigable for vesssls of 30 tons as far as Ripon, where, on account of the rapidity of the stream, all prospect of navigation ceases.

The Derwent, rising in the eastern Moorlands within about 4 miles of the sea, and taking a southerly direction parallel to the coast, until it comes to the foot of the Wolds,* there takes a west, and afterwards a south-west direction, and passes by the town of Malton, to which it is navigable from the Humber for vessels of

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* An elevated and extensive range of chalk-hills in the East Riding.

25 tons. It is the boundary between the North and East Riding, from its junction with the little river Hertford, till it arrives near Stamford-bridge, where it enters the East Riding.

The Foss, a small stream which rises near the western end of the Howardian hills, unites with the Ouse at York. It is supposed to have been a work of the Romans, executed for the purpose of laying dry an extensive tract of flat and very wet country, lying between the Ouse and Howardian-hills; but if that was the original intention, it has long since ceased to be fulfilled, through the neglect of many ages, the course of the stream being almost entirely warped up: an act of parliament was, however, last year obtained, for restoring the drainage, and making a navigable cut from York to Stillington, a distance of about 14 miles; and the work is already entered upon.

The Swale, the Esk, and the Rye, rise and flow, for their whole course, within the North Riding: though considerable streams, they are scarce capable of navigation; for having their sources in very mountainous countries, they are shallow, rapid, and as well as all the other rivers and streams in the Riding, except the Wisk alone, liable to sudden, violent, and frequent floods; an act was some years since obtained for rendering the Swale navigable, as far as the vicinity of Northallerton, with a branch up Cod-Beck to Thirsk, and another up Bedale-Beck to Bedale; but the navigation never was completed, either for want of money, or an injudicious expenditure of it.

The Cover, the Greta, the Wisk, the Leven, the Riccal, the Dove, the Seven, the Costa, and a multitude of other streams, with which the Riding is watered, serve only the purpose of turning a few insignificant mills.

It is observable that the Rye, the Riccal, Hodge-Beck, the Dove, the Seven, and the Costa, are all ingulfed during their passage through the narrow range of lime-stone hills, which skirt the southern side of the eastern Moorlands; and again emerge at their foot, on the southern margin of Ryedale, after having been lost for the space of from half a mile, to a mile and an half.

Towns.——In this Riding are 19 market-towns, *viz.* Askrigg, Bedale, Easingwould, Gisbrough, Hawes, Helmsley-Blackmoor, Kirby-Moorside, Malton, Masham, Middlcham, Northallerton, Pickering, Reethe, Richmond, Scarborough, Stokesley, Thirsk, Whitby, and Yarm; and about 450 villages.

SURFACE, CLIMATE, SOIL, AND MINERALS.

Coast.——The district described by the term Coast, comprehends the cultivated land lying between the eastern moors and the ocean. It is hilly and bold, and from its situation cold and bleak ; but in some of the vales, which are sheltered both from the westerly winds and the sea air, corn ripens well. The cliff of the coast is generally from 50 to 150 feet high ; the foot of which is in some parts always washed by the sea, and in all parts at high tides ; from this cliff the country rises very rapidly, in the space of from half a mile to a mile, to the height of 300 or 400 feet.

Soil.—The soils are a brownish clay, a clayey loam, a loam upon a strong clay, a lightish soil upon an allum shale, a loam upon a free-stone,* or, as it is here called, a greet-stone ; and in some vallies west of Whitby, a deep rich loam.

Minerals.—The hills along the coast abound with allum shale ; and works for procuring this mineral, are carried on in several parts of it ; no other minerals have yet been found.

Cleveland.——The fertile district of Cleveland lies on the north-west side of the eastern moors ; from these it is divided by a range of cliffs, from which I suppose it derives its name. It is lightly featured with hills, and has few fields, except near the sea, which have not a gentle slope. The climate of it, from its situation betwixt the eastern Moorlands and the sea, and from lying open on the west to the winds, from an extensive, uncultivated, and mountainous country, is cold, but the soil becomes dry and very stiff, by a long state of aration, and the frequent use of lime, bakes with the heat of the sun, and hastens harvest to the time of warmer climates.

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* By a free-stone, or greet-stone, is meant a silicious or vitrescent sand-stone, in opposition to a calcarious stone or lime-stone.

Soil.—The soil is generally a fertile clay, with some clayey loam, and fine red sandy soil; the last of which is chiefly to be met with between Marske and Worsall, and about Levington and Crathorne. Near the moors, particularly in the neighbourhood of Kildale, is a good deal of deep rich loam.

Vale of York.——This extensive vale has the Moorlands on each side, except where it opens into Cleveland, or is separated from Ryedale by a range of hills, called (by Marshall in his Rural Economy of Yorkshire) the Howardian hills. From the river Tees at the head of it, is a gradual slope, though with some irregularity of surface, and some rather bold swells, quite to York, where it sinks into a perfect flat. The climate of those parts which are near the moors, is rather cold, from their exposure to them, and increased elevation; but in other parts mild and temperate.

Soil.—To give an accurate account of the soil and fertility, which are extremely variable, it is necessary to traverse the the country, and describe the soils in each part.

The level land near the river Tees, consists in general of a rich gravelly loam.

Upon the high ground, on the west side of the road leading from Catterick to Pearce-bridge, the soil is for the most part strong, and generally fertile, but in some places, cold and springy: some fine hazle loam is also to be met with.

On the south side of the road, leading from Greta-bridge to Catterick, is much fine gravelly soil, with a considerable quantity of clay, and some peat; and on the north side of Richmond, a mixed loamy soil, in most places upon lime-stone, but in some upon a free-stone most excellent for building.

On the east side of the road, between Catterick and Pearce-bridge, there is some cold thin clay, upon what is here called a moorband; * there is also some gravelly and some clayey loam, part of which is cold and springy.

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* This stratum, which is from 6 inches to a foot thick, is of a ferruginous ochreous appearance, probably containing much iron, and wherever found is attended with great sterility.

About Barton, Melsonby, and Middleton Tyas, the soil is loamy upon lime-stone. About Halnaby, and from thence, in an easterly direction to the edge of Cleveland, and all the way betwixt the Wiske and the eastern Moorlands, as far south as Borrowby and Thornton le Moor, is for the most part cold, clay soil; though in some places less tenacious soils, mixed with large quantities of large cobble-stones, or pebbles of various kinds, are to be met with.

On the West side of the road, between Richmond and Leeming, a good gravelly soil prevails; towards Hornby, a good gravelly clay; at Langthorn, a good sandy loam and some peat.

The land on both sides the brook, which runs from Constable-Burton past Bedale, consists for the most part of a rich loam, but is in some places gravelly.

The country betwixt the above mentioned brook, and the West Riding, and on the West side of the road from Boroughbridge to Leeming, is generally a turnip soil, though of various qualities, consisting of a loamy soil upon lime-stone, a gravelly loam, and a rich hazle loam; except that in some parts there are patches of swampy ground, and cold clay land. That corner of the vale east of Middleton Tyas, and west of the Wiske, and north of a line drawn from Scorton to Danby Wiske, is mostly cold and wet, some of which has a moorband under it; but on the west side of this tract there is some clayey loam, of pretty good quality, and a little excellent gravelly loam, which last is chiefly employed as grazing ground.

On each side of the river Swale, and between that river and the Wiske, and south of Scorton and Danby Wiske, to the junction of the Ure and Swale, is a very fertile country; consisting of rich gravelly loam, and some fine sandy soil, with, in some places, very good clay soil, of the last of which the country for a few miles north of Pickhill chiefly consists; nevertheless, there are some patches of cold clay soil, and also a little peat here and there scattered through the whole of this part of the district: on the banks of the Swale are many very rich grazing grounds.

For a few miles north of Thirsk, there is some fine, rich, strong loamy land.

On the north-west side of Thirsk, begins a vein of sandy soil, which runs near the rivers Swale and Ouse, until it comes within about 10 miles of York; where, leaving the river, it passes York a few miles to the north, and extends to the river Derwent; it is in most places four or five miles broad, and in general leaves only a narrow strip of rich grazing ground adjoining the rivers Swale and Ure: about Myton, Brafferton, and Helperby, the sand is of a dark colour, and remarkably fertile; but in general this sandy tract is barren and wet, a considerable part of it lying very flat. About Shipton and Skelton, fine sandy loam prevails; but on each side of York (south of the sandy tract, and to the boundary of the Riding), is a good strong clay, or loamy soil.

The country between the above described sandy soil and Hambleton, from Easingwould to Thirsk, is in general a strong retentive clay, in some places full of cobble-stones, a little good loam upon lime-stone, some fine sandy soil, and wet springy sand, being occasionally intermixed; near the rivulets the soil is in general strong, upon a strong bed of gravel; near the south foot of Hood hill, under Hambleton hills, is a bed of petrified matter, two or three feet thick, and below that, a rock of remarkably hard porous lime-stone, of a light colour.

The country betwixt the tract of sandy soil above described, and the Howardian hills, is in general level, the soil varying in all degrees, from a strong clay to a sand; the clay in some places good, in others poor, thin and cold; near the Derwent is some fine loamy soil.

Minerals.—There has lately been found near Thormanby, between Easingwould and Thirsk, a bed of coal; what has yet been raised is of an ordinary quality, heavy, sulphureous, and burning to white ashes; but there is expectation of a better seam below, in quest of which they are now sinking.

Howardian Hills.——This range of hills which runs from west to east dividing the Vale of York from Ryedale, is high and bold; the climate, particularly of the west end, from its vicinity to the moors, and greater elevation, is cold, and the corn consequently rather late in ripening.

Soil.—The soil on the west end of this tract, is mostly a good strong loam upon a clay mixed with cobble-stones; about Gilling, and towards Bransby, thin and poor, in most places near to a greet, though in some to a lime-stone rock; but on the southern side of these hills, a good clay and loamy soil prevails: from Bransby to Sheriff Hutton, the soil is generally a rich clayey loam; the valley on the north side of Sheriff Hutton consists of a clayey loam upon a bed of strong gravel, and lower down has some peat; the hills rising from the northern side of that vale are mostly of a rich strong soil; but on their north-eastern extremity quite to the Derwent, it is light and fertile upon a lime-stone rock; the northern verge of these hills is a thin loamy soil, in some places rather sandy, in others gravelly upon a lime-stone rock, or rubble.

Minerals.—Upon Gilling Moor, south of Helmsley, some pits have been sunk for coals; but the quality has proved so ordinary, and the seams so thin, as not to encourage a further search.

Ryedale, with the East and West Marishes,——Form one vale, Pickering-Beck dividing Ryedale from the Marishes; the surface of the lower parts of Ryedale is very flat, and a large proportion of it liable to be flooded, the waters being much retarded and kept up by a mill of little value at Newsham, and by the extreme curvature of the river; the bridge at Kirby Misperton also contributes much to keep up the floods, it has only one arch, which is quite insufficient to admit the quantity of water which comes down after heavy rains; an additional arch might be built at a very moderate expence. In many places the Rye and the Derwent, as well as the smaller streams falling into them, have been embanked, but almost always injudiciously, not upon any regular plan, and without leaving sufficient fore-shore; the consequence has therefore been, that by contracting the passage for the water, the force, rapidity, and height of the stream, have greatly augmented, the probability of the banks breaking increased, and when broken, of doing additional injury, particularly in the summer time; and where both sides of the river have not been embanked, of throwing with increased power an accumulated weight of water on the opposite shore. The flat is broken by several insulated swells of considerable extent and elevation. On the north side of the dale, the surface rises with a moderate ascent for three or four miles to the moors, which break down abruptly from it. The climate is mild, and favourable to the production of crops in an extraordinary degree.

Soil.—The soil at the foot of the northern margin consists of an hazle loam, upon a clay bottom, or a deep warp or silt upon gravel or clay; this warp, evidently washed down by the floods of many former ages, from the higher country; these are soils of extraordinary fertility; some cold clay, and yellow loamy soil, mixed with sandy cobbles of less fertility than the last, are in some places to be met with.

The detached swells are a rich strong clay, one excepted, which is sandy.

The northern margin of the vale is chiefly a deep loamy soil, upon a reddish ill-formed stone, which will not burn into lime, and is not capable of being worked as a free-stone; but under which is a lime-stone of extreme hardness, and much resembling the Derbyshire marble; toward the eastern end of the margin, we meet with a sandy loam upon gravel; as the moors are approached, the soil becomes less fertile and more stiff, though still upon lime-stone, and in some places it is yellow sand.

The soil of the Marishes is chiefly clay, with some sandy loam, gravel, and peat; the whole very low and very wet, in consequence of the river being very crooked, much choaked, insufficient for the floods, and dammed up ten feet at Old Malton Mills, by which means about 11,000 acres of land, which, if dry, would be very valuable, are greatly injured, or rendered totally useless.

The Eastern Moorlands.——This wild and extensive tract of mountains, which occupies a space of about 30 miles by 15 or upwards, is penetrated by a number of fertile cultivated dales.

The great altitude of these moors, renders the climate extremely cold and bleak, which will always be a bar to their improvement. The surface of some of the higher hills is entirely covered with large free-stones; on others large beds of peat, (which in many places are very deep, frequently not to be passed, and never without danger), extend themselves to a great distance; the produce of which is always ling *(erica tetralix, vulgaris, & cinerea)*, but in some places mixed with bent *(juncus bulbosus)*, and rushes *(juncus effusus)*. Near to the old inclosures, some pretty considerable tracts of loam, and sandy soil, producing furze *(ulex Europæus)*, brakens *(pteris aquilina)*, thistles and coarse grass, with but little ling, are to be met with. But wherever ling is the chief produce, the top soil is invariably black moor or peat, in some places of a firmer texture than in others. In the sub-soil, is considerable variety: in some places a yellowish, in others a reddish clay occurs; a loose red free-stone rubble, upon either a rock or clay, is very common; in some places a kind of rotten earth, inclining to peat,* and also an hard cemented reddish sand, and a grey sand are found. The basis of all this district is invariably a free-stone.

The western end of these Moorlands, which is called Hambleton, is very different from those above described; it is generally a fine loamy soil upon a lime-stone rock, producing a large quantity of coarse grass, and bent in some parts, particularly towards the south-east point, mixed with some ling.

The Minerals—are coals and allum; the first of but an ordinary quality, and thin in the seam; the last of great thickness, inexhaustible in quantity.

The cultivated dales situated amongst these moors, are pretty extensive, some of them containing from five to 10,000 acres; and Eskdale, and Bilsdale much more; the bottoms of the vales are mostly narrow, seldom more than 200 yards; but the land is generally cultivated from half a mile to a mile up the hills, though the surface is in many places very irregular.

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* Where this sub-soil is found, the ling is very large and strong, mixed with bent, and very luxuriant rushes.

The climate is colder than in the country surrounding this district, yet corn will ripen very well, where sown in pretty good aspect.

Soils.—Most of the dales partake more or less of the following: a black moory earth upon a clay, a loam upon a clay, a sandy soil in some places, intermixed with large greet-stones, upon a shale, and a light loam upon a greet rock; but in the neighbourhood of Hackness, on the eastern part of the moors, we find in some instances, on the hill sides, a rather stiff loam upon lime-stone, and a deep sandy loam upon a whin-stone; and in the bottoms, a light loam upon gravel or free-stone.

The Western Moorlands——Are a part of that long range of mountains, which extend northward from Staffordshire through Derbyshire, Yorkshire, Lancashire, Westmoreland, and Cumberland, into Scotland; that part of it which lies within the North Riding, differs materially from the Eastern Moorlands; instead of black ling, we find many of the mountains covered with a fine sweet grass; others with extensive tracts of bent; some produce ling, but it is mostly mixed with a large portion of grass, bent, or rushes.

Soil.—In the lower parts of these moors, is some fine loamy soil, in many places a stiff loam, upon a hard blue lime-stone. The hills covered with grass, consist, with scarce any exception, of lime-stone. The bent generally covers a strong soil lying upon greet, or free-stone rock; the black ling, a reddish peat, upon a red sub-soil, or in many places a loose greet rubble, beneath which is a greet rock. The climate of these moors is colder than that of the eastern moors, the altitude being much greater, but I apprehend not less favourable to vegetation; the western moorlands not being exposed to the sea air, as the eastern are, though snow lies much longer upon them; they are also much more liable to rain.

Minerals.—There are many lead mines upon these moors, some of which have been, and others still are, very valuable. Coals are also got in divers parts, but they are not good.

Many of the dales which intersect these moors are very fertile, of which Wensley Dale may be ranked the foremost, both for extent and fertility; the bottom of it consists of rich grazing grounds, through which the river Ure takes a very serpentine course, forming in many places beautiful cascades. From the bottom of the valley the hills rise with a moderate slope, though with a very irregular surface, to an amazing height, and are inclosed for a mile or a mile and an half from the river. Through those on the south side of the dale, several small dales open into the larger.

The soil of Wensley Dale, on the banks of the river, is generally a rich, loamy gravel; on the sides of the hills, a good loam, in some places a little stiff, and generally that, upon a lime-stone, is predominant; some clay and peat also occupy a part of them.

Swale Dale is the next to Wensley Dale in extent, but falls far short of it in beauty, the bottom being narrow, and the hills steeper than in Wensley Dale, but the soil is in some parts not much inferior in fertility; in the lower parts a rich loam prevails, which is in some places gravelly; on the hill sides, a thin loam upon greet, and in some places upon lime-stone, and some clay and peat moss are met with.

The other dales, though much smaller than those above described, are very similar to them in their soils; and several of those, whose streams empty themselves into the river Tees, are very fertile.

ESTATES, AND THE GENERAL MANAGEMENT OF THEM.

The size of estates in this Riding is very variable; about one-third of it is possessed by yeomanry, the remainder is divided into estates of various sizes, from £ 500. to £ 15, or 16,000. per annum. Much the largest proportion of the dales on the moorlands is in the possession of yeomanry, in estates generally below £ 150. per annum.

The tenure of the country is freehold, with some few instances of copyhold property, and some of leasehold for 1000 years, or other long term of years.

The tenure of the occupiers of the ground is almost universally that of tenants at will, that is, holding from year to year ; though there are a very few leases for years, and some for three lives, renewable at the fall of every life ; these last are chiefly held under the church, or other corporate bodies.

Leases.——Very few leases are granted, especially by the owners of large estates ; but there is one gentleman, the owner of an estate near Scarborough, who is on the point of letting leases for fourteen years. The conditions of these, and the scale of husbandry annexed thereto, not being in the common line, I shall here insert.

" The landlord agrees to let to the tenant, his executors, administrators, and *limited assigns*, a certain farm for the term of 14 years, with all its rights and appurtenances ; reserving all mines, quarries, and royalties, and all timber and other trees, &c. with full power to view, search for, cut down, and carry away the same at seasonable times of the year, paying such compensation for damage, as two indifferent persons of equal degree shall award and direct. The landlord also reserves liberty to enter upon the said premises, to view their repairs and condition, and also for himself and attendants, to take and pursue the game thereon, at his will and pleasure.

" The term commences the fifth day of April, and continues after the expiration of the term of 14 years, from year to year, so long as the landlord and tenant shall please.

" Provided always, that if the rent of the said premises before reserved, or any part thereof, or the other occasional rents, shall happen to be in arrear and unpaid, by the space of twenty days, next after either, or any of the said days or times, whereon the same shall become due and payable, being first demanded; or, if the conditions, covenants, and agreements herein contained, are not duly performed and fulfilled by the said tenant, his executors, &c. thenceforth the lease shall be void.

" The tenant agrees to pay his rent by equal portions, on the 10th day of October, and 5th day of April, free from all taxes and impositions whatsoever, parliamentary or parochial (except the land-tax), the first payment to be made on the 10th day of October next ensuing, after the execution of the lease. Also to pay all taxes and impositions, parliamentary or parochial, which shall during this demise be laid or assessed upon the said premises.

" And also yearly, and every year during the demise, to lead or carry with their teams, on the customary days called boon-days, to the hall or chief house, such articles as have been customary, or shall be required; and to perform all other suits, services, duties, and customs of any kind, which are, or shall at any time be taxed, charged, or imposed upon the premises. The tenant to pay, with remedy and recovery by distress and sale, upon default of payment, the several additional rents hereinafter mentioned; that is to say, £ 10. for every acre, and so in proportion after that rate, for every greater or less quantity than an acre, which he, his executors, administrators, or limited assigns, shall, contrary to the mode or course of agriculture and management, prescribed and expressed by the indorsement, signed by the parties, plough, dig up, pare, burn, or keep in tillage, or otherwise convert into arable, without the special leave or consent of the landlord in writing, first obtained.

" Also to pay yearly during the said term, on the half yearly days of payment aforesaid, over and above the rent, the sum of ten pounds for each and every acre of the premises hereby demised, and so in proportion for any greater or less quantity than an acre, if he, his executors, or administrators, shall at any time during this demise, directly, or indirectly, demise, let, or assign over, or otherwise part with, his or their interest therein, wholly or in part (other than a cow-gate to a cottager, holding under e said landlord) without the special licence and consent of the id landlord, in writing under his hand, first had and obtained r that purpose.

" Also to pay ten shillings for every acre of land sown down r turnip-seed which shall not be hoed, or shall be improperly oed, or weeded contrary to good husbandry ; or shall be eaten ff, or depastured with any other cattle than sheep.

" Also to resort with his corn to the lord's mill, and to perorm and observe all such rules, ordinances, and by-laws, as have een, or may be agreed upon, at the court leet and court baron eld for the manor ; and to consume and eat with his cattle on he lands, or some part thereof, all the grass, hay and straw, hich shall yearly grow upon the same, except what may renain in the last year of the said term, which shall be eaten bewixt Ladyday and Mayday next after the determination of the aid term, upon such part of the demised grounds as shall be alotted or appointed for that purpose by the landlord ; and not o sell, carry away, or dispose of any of the manure, dung, or ompost, which shall be made on the premises, but shall make se of the same upon his lands ; and shall leave the last year's nanure, straw, dung, and compost produced thereon, for the benefit of the farm, receiving such compensation for the same as hereafter mentioned.

" Also to preserve, and defend from cattle and other damage, all young trees and quickset-fences, which are growing, or during the continuance of the demise, may be set and planted upon the premises. And not to burn any fern, or whins (furze) to ashes, in order to sell them to the boilers, or makers of soap, or any other person whatsoever, without the special licence of the landlord in writing.

" Also, at his own proper cost, to employ such mole-catcher for the destroying of the moles, within the said premises, as the landlord shall, from time to time, appoint and approve.

" Also, at his own cost, sufficiently to cleanse and scour one-ixth, or such other part of the ditches and water courses, at least nce in every year, as the landlord shall direct. And to uphold and keep in repair, all the houses and buildings on the premises (such houses and buildings being first put into repair, and the helms or shades covered in, at the expence of the landlord).

" Also not to sow down any part of the premises with rape, hemp, flax, woad, weld, madder, or hops, without leave in writing for that purpose, first had and obtained from the landlord; and not in any one year during the demise, to plant *with potatoes any greater quantity than one acre and an half of ground*; and that in the same field sown, or intended to be sown with turnip-seed, and no where else; and not in the last year of this demise, to sow down with wheat, any greater quantity than one-fourth part of the land occupied, in the regular prescribed course of tillage, the crop of which shall not be taken away from the premises, but shall be left for the benefit of the farm, such compensation being paid for the same, as thereinafter mentioned. And that after the lands shall be brought into a regular course, by the method or mode prescribed by the indorsement, not to have more from that time forward, than one-fourth of the land in tillage sown down with wheat, in any one year during this demise.

" Also during the continuance of the lease, not to stock any part of the lands with rabbits.

" The landlord agrees to allow the tenant, his executors, &c. on his leaving the farm, *for the clots of turnips and wheat* * sown in the last year of this demise, and for the manure produced in such last year, and also for such part of the hay and straw, as shall not be eaten and consumed, such price, as two indifferent discreet persons, chosen by the landlord and tenant as arbitrators, shall award and direct; whose determination shall be final and conclusive; the crop of wheat to be viewed and valued in the month of August or September, before the cutting of the same;

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* That is, for the improvement that shall have been made by preparing the land for a crop of turnips, and by having eaten the turnips upon it, during the winter preceding the 5th day of April, when he quits his farm; and likewise for his expences in cultivating the land, and sowing it with wheat in the preceding autumn; and if sown upon a fallow, then to allow a year's rent, exclusive of the above expences.

the tenant paying, or allowing out of the money so to be awarded for the land so sown down with wheat, one year's rent, clear of all deductions.

" Also that the tenant may have for the use of the farm and premises (only) from the quarries, any quantity of lime-stone, paying to such person as shall be appointed to get up the same, the sum of fourpence for each waggon load.

" They mutually agree, that in case of any difference, about any matter respecting the demised premises, which is not before provided for, it shall be determined by arbitrators and an umpire, chosen in manner aforesaid. And that it shall be lawful for the new, or oncoming tenant, his servants and workmen, with, or without horses, or other cattle and implements of husbandry, at all times in the proper season, between Michaelmas and Lady-day in the last year, to enter upon the said premises, to dress the meadow and pasture ground, and to plough and work such part of the land, as shall by the said scale of husbandry be specified to lie for the next summer fallow; and to plough and sow with spring corn, such other part as shall not have been fallowed the preceding year; or, as it shall be necessary, in the course of tillage, to sow down with such grain, without paying or allowing any thing for the same to the tenant.

" And lastly, for the true performance of all the covenants, &c. herein contained, the tenant binds himself in the penal sum of three hundred pounds.

SCALE OF TILLAGE.

No.	Quantities.	Year 1780	1781	1782	1783	1784
	A. R. P.					
1	2 3 22	Turnips	Oats, with grass seeds	Grass		
2	4 2 26	Oats	Fallow	Wheat	Turnips	Oats, with clover
3	3 0 36	Barley, turnips	Oats, potatoes	Do.	Do.	Do. Do.
4	3 3 33	Fallow	Wheat	Turnips	Oats, with clover	Clover
5	3 3 0	Do.	Do.	Do.	Do.	Do.
6	5 1 19	Wheat	Oats	Fallow	Wheat	Turnips
7	2 0 11	Do.	Do.	Do.	Do.	Do.
8	5 1 22	Do.	Turnips	Oats, with clover	Clover	Wheat
		Grass	Grass	Oats	Fallow	Do.

" Succession of tillage, after the completion of the above scale.

First—Turnips, with one acre and an half of potatoes in same field.

Second—Barley or oats, with clover seeds, fourteen pounds to each acre.

Third—Clover, the first crop mowed, the second crop eaten off with sheep.

Fourth—Wheat, on the clover stubble.

" In laying down the land to grass, not less than one quarter of hay seeds, and twelve pounds of dressed seeds, such as red clover, white clover, rib grass, and trefoil, to be sown on each acre.

" N. B. Since the above scale was adopted, it has been found that the land will not bear the clover husbandry in a constant round; therefore, it has been changed to turnips, barley, or oats, grass seeds three years, and then to be ploughed up for wheat.

" PENALTIES IN THE INDORSEMENT.

	£.	s.	d.
Tenant, to lay three chaldrons of lime (each chaldron consisting of 32 bushels) on each acre designed for turnips, or fallow for wheat, or pay for each chaldron omitted	0	10	0
To consume on the premises all the hay, straw, and manure, or pay for such a load of hay sold, or carried off	2	0	0
A thrave of straw, do. do. 2*s*. cart-load of manure 5*s*.	0	7	0
N. B. To have ground assigned him whereon to eat (between Ladyday and Mayday) what hay and straw may be left unconsumed of the last year.			
To employ the mole-catcher as before mentioned, or pay for each acre of ground contained in his farm	0	1	0
For every sale, or lot of brakens for burning, (without leave) to pay	10	0	0
Working or digging any mine or quarry, to pay	10	0	0
" To plash hedges at such seasons as the owner or steward shall appoint, and in the mean time to keep the young hedges properly weeded; or for every year it shall be omitted, to pay	10	0	0

" To pay such sum of money for repairing such buildings (as were in good repair at, or put in repair since, the time of entering) and for repairing such fences as shall be estimated by proper workmen, to be appointed by the owner, receiver, or steward, after the arbitrators, or umpire have determined whether they are or are not in proper repair, &c.

" For neglecting to thatch all, or any part of the houses or out-houses, to pay such a sum of money as will completely repair the same; to be estimated by a thatcher, or other proper judge, to be appointed by the owner, receiver, or steward.

" For felling or lopping any kind of trees (except hazles and thorns for hedging, in the places to be assigned him) to pay treble the value of such trees."

The tenant being bound "to resort with his corn to his lord's mill," appears to be an improper tie; for if the tenant suspects the miller's honesty, or if he does not do his business properly, it is unreasonable that he should be bound to employ him; and checks also in the miller, that obligation and gratitude which he ought to ſeel towards his employers.

The scale of husbandry annexed to the lease, (with a proper liberty to vary as seasons may require), I think an excellent plan.

In the northern part of the Vale of York, I met with another lease of a farm of about £550. per annum, some of the covenants of which, not being very common, I shall here insert.

"The landlord agrees to let to the tenant the specified premises, at the rent therein mentioned.

"The buildings, fences, gates, &c. to be all in good repair, at the time of entry.

"Tenant agrees to pay all taxes and assessments, excepting land tax.

"Also to keep all buildings, fences, and gates, in repair (casualties by fire, or violent storms of wind, excepted) the landlord finding all materials for repairs.

"Also sufficiently to hedge, ditch, drain, trench, fence, cleanse, scour, and keep up, all the hedges, ditches, drains, trenches, and fences, belonging to the premises: and within two calendar months after notice shall have been given him so to do, or to repair any of the said buildings, &c. in case of default therein, that it shall be lawful for the landlord to employ proper labourers to do such repairs, &c.; and that the landlord may enter into the said premises, to distrain for all such expences, and at the end of five days, to appraise, sell and dispose of the same.

"Also to carry all the bricks, timber, and other materials used in repairing, provided the distance does not exceed five miles from the said farm house.

"Also to make all such new fences, ditches, or drains, as his landlord shall think proper, the landlord finding quickwood and young trees, and paying half the workmanship of making such new fences, &c.

"Also to use and spend upon the premises all the hay, straw, turnips, or clover, which shall grow upon, or arise from the said premises; and that all the dung, &c. arising from the hay, straw, &c. consumed in the first twenty years of the term, and all the ashes and manure produced in the messuages, &c., shall *be laid and spread upon the pasture and meadow ground,* and that the dung, &c. made in the last year of the said term, shall be left for the use and benefit of the landlord, or the on-coming tenant, without any allowance for the same.

"Also that a fourth part of each portion, or division of arable land shall be summer fallow, or turnips, and shall have laid upon it not less than two chaldrons of lime per acre. One other fourth part barley, after turnips, with which twelve pounds of clover seed shall be sown, and which shall continue in clover 18 months from the time of sowing. One other fourth part shall be wheat, or oats, after clover, which shall be succeeded by fallow.

"Another arable part of the said farm, shall be one-fifth a summer fallow, with two chaldrons of lime per acre. Another one-fifth wheat, or spring corn after the fallow, with which shall be sown four pounds of white clover, five pounds of rib grass, three pounds of trefoil, and six bushels of hay-seeds; which shall continue as pasture two years, from the time the wheat crop is taken off the ground, which may then be ploughed out for wheat, or spring corn, and the next year fallowed.

"Another arable part of the said farm shall be managed as the last, only divided into six parts, and the grass shall lie three years. The penalty for non-performance of the above course of husbandry, five pounds per acre, for all the land not so managed.

"Not to plough, or dig up any of the old grass land (except what is mentioned in the said lease) under penalty of five pounds per acre, to be paid as an advance of rent yearly, during the remainder of the term.

"If the tenant shall pare and burn, he shall lay on the land 1½ chaldron of lime per acre, the same year it is pared and burnt; in default of laying on that quantity of lime, to pay the last mentioned penalty, for every acre, more or less, not so managed.*

"Also not to keep a larger number of cattle upon the farm the last year of the term, than has usually been kept."†

In the northern neighbourhood of Richmond, there are many leases granted for seven or fourteen years; but the covenants are not singular, but generally bind the tenants to scour annually one rood of ditching for every pound rent, and some not to take two crops of corn successively, and not to plough out any fresh land without leave.

Where leases are not granted, special covenants are sometimes entered into; but often no others than that the tenants shall not plough out fresh land without leave: and in the northern part of the Riding, tenants generally covenant to lay a certain quantity of lime on their fallows, at the rate of from one to 2½ chaldrons per acre. Nevertheless, there are, upon a few estates, other clauses which I shall here insert.

Upon one estate in the northern part of the Vale of York (not let upon lease) tenants covenant, not to sow two crops of white corn together.

Also to give *one year's notice* of quitting the farm, and that year *not to make the fallow for the next*; the landlord reserving a liberty for himself, or his on-coming tenant to manage such fallow.

The tenant also to pay his whole year's rent the Michaelmas preceding the leaving his farm, who consequently has *no way-going crop when he leaves the premises.*

In these covenants there are some things very new, particularly in that of the tenant not managing the fallow in the last year. It is desirable, if it can be done, for the tenant to have no right or interest in the farm at the time he quits it; for it is always unpleasant to an on-coming tenant, to have the old one about his premises, for so long a time as is necessarily the case, in some modes of entry and quittance. The above covenants seem in a great measure to do away that inconvenience.

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* An excellent covenant; it has been found by experience, that lime acts most powerfully upon land that has been lately pared and burnt; and wherever paring and burning is allowed, it ought only to be on condition of using a proper quantity of lime.

† A very fair covenant for the off-going tenant, and no more than what is due for the on-coming one to have.

When a tenant leaves his farm he is entitled, by the custom of the country (if there is no covenant entered into to the contrary), to a crop from the land which was fallow, or turnips, during the year preceding the 5th day of April, on which the term expires, as a compensation for the labour and expence attending such fallow, or crop of turnips, which the above is meant judiciously to prevent, in consequence of the great inconvenience arising from the custom.

Time of Entry.——In Cleveland and in the northern part of the Vale of York, the tenant enters upon two-thirds of the ploughing at Candlemas, the pasture land at Ladyday, and the house and meadow land at Mayday (all O. S.) But the off-going tenant has the use of so much of the barns and fold yards, as is necessary for threshing out the corn, and consuming the straw of the crop, which crop is off the land that was fallow the preceding year.

Sir Ralph Milbank's tenants at Halnaby have their crop on two-thirds of the arable land, so that the on-coming tenant enters to no arable land, but that which comes in for a fallow.

Some landlords in this part of the Vale insist upon turnips (even when eaten upon the land) being considered as a crop. I understand it had its origin in this part of the country, with the late Earl of Darlington on the other side of the Tees, where it is now almost established as a custom. But they who have, or intend to adopt such a practice, ought to consider, whether the land is not in a better state for a crop of corn, after a crop of turnips eaten upon the land, than after a summer fallow? and if the tenant were to sell the turnips (to be eaten upon the land) at the best price he could get, whether their value would be sufficient to repay him for his expence and labour in making such a fallow? and if it should appear, that the land would produce a better crop of corn after turnips so consumed, than after a summer fallow, and that the turnips in most cases would not be sufficient to repay the tenant, and leave him a reasonable profit, whether such a procedure is equitable?

In the other parts of the North Riding, Ladyday is the time of entry to the whole of the farm, excepting to the land which was either fallow or turnips the preceding year, on which the off-going tenant has his crop; unless the on-coming tenant and he can agree upon a compensation for the fallow, which is very often done.

Rent of Land.——The average rent of farms of pretty good soil is from fifteen to twenty-one shillings per acre; in which there may be land rated at from five, to thirty-five shillings per acre; so that the average value of a farm, will vary according to its proportion of good and bad land. Some farms of the latter kind, may be let as low as five shillings per acre, and some let cheaper, at thirty shillings per acre. Near large towns land is let at three or four pounds per acre.

Size of Farms.——In so large a district of country, and especially where there is so great a variety, both in the quality and value of the soil, it is to be expected that there will be a great difference in the size of farms; and this is the case, as they vary from £ 10. to £ 1000. per annum.

In the northern part of the Vale of York the rental of farms is usually from £ 100. to £ 300. per annum; of very few perhaps as low as £ 40. and of some as high as £ 600. But further to the southward there is a larger proportion of small farms, some of which are as small as £ 20. per annum, with others as high as £ 200.

On the Howardian hills, the generality of farms are under £ 100. per annum, very few as high as £ 200.

In Ryedale are several large farms, from £ 200. to £ 1000. per annum, or upwards; nevertheless, the greater proportion of it is in farms below £ 100.

In the Marishes they may generally be stated at from £ 50. to £ 150. per annum; few as high as £ 200.

In both the Eastern and Western Moorlands the farms are small, very few above £ 100. per annum, but generally from £ 5. to £ 40. per annum.

Wherever there are towns or large villages, a greater proportion of small farms is to be met with.

APPLICATION OF THE LAND, AND THE GENERAL MANAGEMENT OF IT.

Proportion of Grass and Tillage.——In the Vale of York, one-third in tillage and two-thirds in grass is the common proportion; but where there are extensive open uninclosed fields, and in some places where the soil is light, the proportion of tillage is larger, and may amount to about one half. On the western end of the Howardian hills, and from thence to Thirsk (being chiefly a dairy country) not more than one-fourth is in tillage; on the rest of the Howardian hills, near one-half.

Ryedale, the Marishes, and the northern part of the coast, have about one-third in tillage, the southern part of the coast about one-fourth, and Cleveland about one-half.

In the dales upon the eastern Moors, only about one-fifth is in tillage, and in those upon the western Moors, much less. In Wensley Dale scarce any land is in tillage, except a little of an inferior quality which lies near the Moors. In the dales further north, rather more corn is grown than in Wensley Dale; but the quantity there is very small. The inclosed lands in all those dales are chiefly appropriated to meadow; the lower and better parts of the Moors are mostly stinted pastures, on which the cattle are kept in summer.

Course of Crops.——The most common course on strong land throughout the North Riding, is fallow, wheat, and oats; sometimes beans, blendings, (that is, pease and beans mixed) or pease, are sown instead of oats; and not far from Easingwold on the west, fallow, wheat, beans, or blendings, and oats, constitute the common course on strong land.

Some farmers in the northern part of the Vale of York have fallow, wheat, beans, or blendings, or early oats, upon loamy and gravelly soils; but a few, with more judgment, upon those soils, grow turnips, barley, clover, and wheat, and sometimes white pease instead of the clover; also *turnips and barley alternately*, the turnips being always eaten off with sheep, and raised, after the first time, without manure, except sometimes a little lime. Upon such soils in the neighbourhood of Catterick, turnips succeed clover, and after the first crop, also without manure, they being eaten on the land with sheep as well as the clover, except that the first crop of the last is sometimes mown: both these courses are practised with good success, as by these means *the manure is spared for the grass land.*[*] Near Bedale the course is sometimes turnips, beans, wheat, and clover, then turnips again.

In Ryedale and the Marishes, and in some parts of the Vale of York, where the land is not dry enough for turnips, rape is sown upon the fallows, which is eaten off with sheep in time to sow them with wheat. On the lighter soils the course is turnips, barley, red clover, and wheat; sometimes instead of red clover, white clover, with trefoil, rib grass and rye grass, or hay-seeds, instead of the latter, are sown, in which state the land continues for one or two years, and then is ploughed up for wheat: succeeded by turnips, and sometimes (though rarely) by a crop of pease or oats. Another course used there is fallow, oats, and wheat, though sometimes clover comes between the two last, particularly when the land is subject to chickweed; also turnips or rape, succeeded by oats, for *four, five, six, or seven* years successively may be met with, particularly in Ryedale.

There are many extensive open common fields of fine turnip soil in the Vale of York, on which turnips or clover are very rarely cultivated, the course upon many of which is fallow, meslin, or rye, and oats; though upon a few of them turnips are grown by general consent; but unless the farmers are unanimous in their manner of consuming them, a considerable objection attends this mode of cultivation; for the best farmers (desirous of the turnips being eaten upon the land) unite in selling their shares to a butcher or grazier; but there are other farmers who will pull their turnips and carry them home, and consequently their lands receive equal benefit, from the treading and manure of the sheep, with those of their neighbours, without contributing any thing in return; and perhaps more benefit, since the sheep prefer lying upon those bare lands, rather than upon such as are covered with turnips.

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[*] This is an extraordinary course, and worthy of being observed; by calculation it appears to be more profitable than any other.

The common course in Cleveland, and along the coast, is fallow, wheat, and oats; or instead of the last, beans, or blendings; turnips are but little cultivated upon lands suitable for them. Farmers, who grow turnips to pull off for their cattle, are esteemed bad managers; and I am informed that some have been restricted from growing them, except they were eaten with sheep upon the land.

CULTIVATION OF CROPS.

Wheat.—Wheat is generally sown either upon a summer fallow, or a clover stubble, and sometimes on a two or three years lay; but a few practise sowing it after turnips, eaten off before early spring; and it has been sown as late as April, and been found to answer extremely well. I have been informed by a very capital farmer near the Tees, that as good a crop of wheat* as ever he had was sown the second week in April; and also, by another in Ryedale, that he sowed the last year about the beginning of April, and it answered well; and the stubble remaining on the field at the time of making this survey, evinced it to have been a most excellent crop. But the common time of sowing is about the 10th of October, or as near that time as can be done. The usual quantity of seed in the northern parts of the Vale, and in Cleveland, is from five to eight pecks per acre, and in other parts from ten to twelve pecks: a few have used Cook's and Perkin's drills for sowing wheat, and have found the experiment followed by good crops; but they are not thought by all to answer.

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* The wheat here mentioned, as sown in the spring, was a white wheat usually cultivated in this country, and not what is called spring wheat.

Wheat is the staple produce of Cleveland. No other district in the Riding, or perhaps in the north of England, produces as much, in proportion to its size, or of as good a quality. Large quantities are shipped from hence and sent to every part of the eastern coast of Great Britain; considerable quantities also go to Thirsk, which are bought up for the manufacturing parts of the country: and about twenty years since, the upper part of Ryedale was chiefly supplied with wheat from hence, many waggon loads going weekly to Kirby Moorside market; but this is now wholly supplied by its own neighbourhood, which after satisfying the home demand, now sends some to Whitby and Malton markets: from the latter place it is conveyed by water to Leeds, Wakefield, and the manufacturing districts, there to be consumed.

After rape, either grown to be eaten off with sheep, or to stand for seed, the land is generally sown with wheat; the crops after which are thought to be fully equal to those after a summer fallow.

Rye and Meslin.——As it is generally found that light sandy soils, even after clover or grass, are not capable of producing a profitable crop of wheat, they are usually sown with rye, or meslin; the quantity of rye to that of the wheat, being proportioned according to the judgment of the farmers to suit the soil, the rule being to give the most rye to the lightest soil.

Rye is frequently sown after early fed turnips and summer fallows, when the land is too light for wheat. Less of this is sown than of wheat: one bushel or five pecks of rye, being esteemed a considerable seed.

Barley.—Barley is usually sown after turnips, but sometimes after clover, and now and then upon a whole summer and winter fallow; which last practice is generally upon a strong soil.

The time of sowing is from the latter end of March to the first week in May. About ten pecks to the acre are sown throughout the Riding.

Very little barley is grown in Cleveland on the coast, or in Ryedale, and the Marishes.

A few years ago the battledore barley was introduced into Ryedale, since which the cultivation of it has rather increased; it is found to answer better than any other species upon rich land, the straw being stronger, and more tapering than of the other kinds, and the ear standing erect; all which are a means of preventing it from being lodged. The grain is also of superior quality.

There are several plots of those species of barley, called big and bear, cultivated in Ryedale, and in the dales of the eastern Moorlands: the cultivation for them is the same as for barley, than which they are thought to produce a more abundant crop, and to thrive in poorer soils and more exposed situations, but in quality are much inferior to the other kinds.

Oats.—Oats are very much grown throughout the whole arable part of the North Riding, and particularly in Ryedale, that district being as famous both for the quantity and quality of oats, as Cleveland is for that of wheat. The turnip land here is generally sown with oats, as is grass land always when ploughed out; and instances are not wanting, where the attention of the landlord or his steward is deficient, of tenants taking many successive crops of oats, all equally great in quantity and good in quality, without any other expence than once ploughing the land, immediately before sowing it, and still without exhausting the ground, such is its extraordinary fertility, and so peculiarly is it adapted to the growth of this grain. Two crops are always taken, and three frequently. Eight quarters per acre are very commonly produced, but there have been instances of from ten to twelve. Ten quarters have been produced for several years successively.

In the northern part of the Vale of York, they sow of Friesland oats from four to five bushels; of Tartarian oats from five to six bushels; of oats the produce of the country, scarce four bushels. In Cleveland they sow about four bushels; but in the southern part of the Vale, and from thence to the east Moors, and in Ryedale and the Marishes, it is common to sow from six to eight bushels per acre.

Beans and Pease.——Few beans, pease, or blendings are cultivated but in the Vale of York, and not generally there. A few persons have sown beans with a drill, and some have been planted by hand; both which methods have been found to answer better than sowing them broad cast: but the practice of hoeing them has not been much adopted, except in the neighbourhood of Alne and Tollerton, where the farmers are in the practice, and find their advantage in it; when the land is either light, or it is the third crop after a fallow, it is common to mix the beans with grey pease, or sow pease only. They are generally sown after once ploughing in March, at the rate of four bushels of beans, or blendings, or of 2½ to 3 bushels of pease per acre.

HARVESTING.

In the northern part of the Vale of York, and in Cleveland, all the corn is sheared with the sickle. In the southern part of the Vale, and from thence to the Moorlands, it is the usual practice to mow oats and barley with the scythe; and if many weeds, or much cultivated grass are intermixed, they are usually mown outwards, and left in the swath to dry; but when unmixed with other vegetables, they are mown inwards; that is, the mown corn falls against the standing corn; in which case each mower is followed by a woman, who makes bands and puts the corn into a sheaf, which is afterwards set up in stooks, or attocks; the former consisting of 12 sheaves, the latter of 10 sheaves. But in Ryedale oats are frequently "gaited;" that is, the sheaves are tied near the top, and set up single, when dry they are tied again about the middle, and the band which is taken off the top of the last bound sheaf, is used to bind the middle of the next.

Companies at harvest, whether the work is let by the acre, or done by the day, usually consist of an equal number of men and women.

In Ryedale a singular practice prevails, of threshing out the oats at the close of harvest in the open field, or in the stack-yard; sometimes upon a cloth, but often upon the bare turf. For a more particular account of which, see Marshall's Rural Economy of Yorkshire, Vol. II. p. 21.

Considerable advantages arise from this practice, which it is thought more than counterbalance any disadvantages. The corn being threshed so soon after it is cut, measures much more than it would at a later period, when by drying it has pined and lost considerable bulk; all waste by vermin is also prevented; these are general advantages which might be applicable to any country; but considerations of a local nature appear rather to have caused the practice. The manufacturers of the West Riding consume chiefly oat bread, and are fondest of the meal made from new corn; the best and earliest oats they can obtain are grown in this district, and sent to them through the medium of cornfactors at Malton, whither almost the whole produce of it is sent; the commodity which comes first to market, in oats, as in every thing else, bears a considerably advanced price; this the farmers of Ryedale enjoy almost exclusively for several weeks, until a more general supply reduces the price to the general standard: and they have adopted this mode of taking the advantage of their situation. The extreme badness of the roads from hence to Malton, which in winter are scarcely passable with a carriage, may likewise have had some influence, by rendering them desirous of delivering their produce whilst the roads are in their best state.

The disadvantages are, that without a great attention carefully to stack and secure the straw from weather, it is often in a great measure wasted, though there are a few who are attentive to the securing of it; the straw is also consumed in the fields, which is a much less economical mode than in the fold-yard, or in a beast house; the straw is also liable not to be threshed so clean as when done more leisurely in the barn, and there is a greater waste of corn than when threshed in the usual mode.

All the straw is consumed in one place in the field near to the stack, under the shelter of trees or some high hedge; and after it is finished, the manure is thrown up together into an heap; so that the carriage of the straw from the field home, and of the manure back again to the field is saved.

Time.——In the southern part of the Vale of York, in Ryedale, and the Howardian hills (except the west end of them) harvest usually commences about the tenth of August. In the northern part of the Vale, and the west end of the Howardian hills, in Cleveland, and the Marishes, the latter end of the month. On the Coast, and in both the Moorlands, where the situation is favourable, the beginning of October; but in general, the latter end of that month.

Rape (for seed) is rarely grown but upon land pared and burnt. It is sown in August, and reaped generally in June. In most parts of the Riding, it is usual to thresh it in the field, as soon as dry, by a number of men, in proportion to the quantity, so as to finish the whole in one day; though that practice is now rather giving way, to the much better and more economical mode of stacking it in the field, and threshing it out with a few men at a convenient time; and it is sometimes as soon as dry, put into a barn, and there threshed.

Great attention and labour are required to preserve the seed from heating and moulding, when collected in such great quantities in so short a space of time; but this inconvenience and risk is entirely done away by stacking or housing it; the seed being safely cured by remaining a few months in the stack or mow.

Weld (dyer's weed, *reseda luteola*) is very little grown in the North Riding, except by one farmer near Scarborough, who sows it in the latter end of August upon a summer fallow, and gathers it about the same time the following year; after which the land is ploughed, and sown with rape for eating, and after that, sown with wheat. He this year worked a piece of land for turnips, but was prevented sowing it by the drought, and therefore sowed it with rape, grass seeds, and weld seed, in June; and in about a month turned his lambs into it. In November, when he gave me the account, the weld looked extremely well and vigorous.

It is also sometimes sown among clover, and pulled out when it has got to maturity, before the clover is cut.

Flax.——A little flax is grown in Ryedale, and in some few other parts of this Riding; but the quantity cultivated has been considerably on the decline of late years, the parliamentary bounty not appearing in the smallest degree to encourage the cultivation, since the expence and trouble of obtaining it is scarce repaid by the trifling amount of it. It is mostly grown on new ploughed up grass land, after once ploughing, though sometimes upon arable land, made fine by repeated ploughings and harrowings, and attentively freed, immediately after sowing, from all stones and clods, for the plant comes up with a broad top, and so very weak, that it cannot make its way, if there be such resistance.

A clayey loam, when well pulverized, grows line of the best quality, but a sandy loam will grow as much in quantity.

Turnips.——In the northern part of the Vale of York, turnips are frequently sown with the Scotch drill * in ridges, which are ploughed down, and earthed up, and hand-hoed, similar to potatoes; upon a wet or stiffish soil, it is an excellent mode, but it is often practised upon a proper turnip soil, where its advantages do not appear to counterbalance the following disadvantages: the rows must necessarily be so wide as to admit the plough to go between them, and consequently, they are at a greater distance than is necessary for the turnips to obtain their full size; they will not therefore become so heavy a crop, as when sowed upon the level ground. The turnips will also be much more exposed to frost, and consequently not stand the winter so well, as if less elevated from the ground; and what is of still more consequence, so great is the danger of the sheep getting laid on their backs in the furrows during the time of eating them, that it is absolutely necessary for the fold to be constantly attended: however, by this mode of cultivation, turnips may be advantageously grown upon soils, on which they could not otherwise be obtained.

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* This is a hand drill, calculated to sow the seed upon ridges, which is made in Scotland.

Several farmers in the Vale, and also a few in Ryedale, have got a drill for sowing turnips, made by T. Proud of Darlington, which fixes to the plough beam, consequently, sows and ploughs at the same operation. This drill has some advantages beyond any other I have seen: the seed is deposited in the fresh mould, and upon the manure whilst there is moisture in the soil (the land being manured immediately before ploughing), and if the soil is sandy, there is no need of harrowing: these circumstances have a great tendency towards ensuring a crop.

Cook's drill, and also one made by one Perkins of Stockton, is used for sowing turnips, particularly in the northern part of the Vale; but much the greatest proportion of turnips in the whole Riding is sown broadcast.

It appears by the foregoing account of the course of crops, that turnips generally succeed a crop of corn; when that is the case, the land is ploughed in autumn, and made clean and fine by repeated ploughings and harrowings in spring, then manured, at the rate of from 6 to 10 cart loads of dung (each containing about 30 bushels), and sometimes of from 1½ to three chaldrons* of lime per acre, and then ploughed and sown.

When turnips succeed clover or grass seeds, it is common to pasture the land with sheep, so late in spring as only to leave sufficient time for giving the land two or three ploughings, with necessary harrowings immediately before sowing them; but I met with two farmers, one in Ryedale, the other near Scarborough, who have sown turnips upon old pasture land after once ploughing; the latter has practised it for four or five years, and both have found it to answer. I saw both their crops this year, which were sown in that manner, and they were extraordinary good ones. The soil on which those grew in Ryedale was rather a clayey loam, not what is generally thought to be a kindly turnip soil. Those near Scarborough were upon a good turnip soil, but the land had been in grass time immemorial. The mode of management is to plough the land in winter pretty deep; in spring, grass will unavoidably grow on the edges of the flag, or sod, which is kept eaten down with sheep; when the season for sowing draws near, the land is manured with short manure, and extremely well harrowed: in which state it lies until a suitable season offers for sowing.

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* A chaldron of lime is 32 bushels.

There is a species of turnip generally sown in Ryedale, called the stone turnip, which is much superior to the other kinds known here; they bulb quicker, the grain is finer, the skin thinner, and the crown of the bulb smoother; and consequently it is less liable to be injured by wet or frost than the other kinds. This does not grow to quite so large a size as some others, but that want is easily made up by leaving them a little thicker upon the ground in hoeing.

The *ruta baga*, or Swedish turnip, has been sown in small quantities by a few individuals, most of whom approve of it, as it is in high perfection a full month later than the other kinds; but a few disapprove of it, as being hard, dry, and thick skinned, and consequently, as they suppose, affording little nutriment.

Many farmers in the North Riding turn their lambs among the young turnips to pick out the weeds, which they do without materially injuring the turnips, as they will not eat the turnip while there is plenty of other food for them; but if the turnips have got large tops, the lambs by running among them, will break and injure them considerably, and impede their growth.

Potatoes.——Potatoes are much grown in the dales and margins of the Moorlands, both for feeding cattle and pigs, and for family use; considerable quantities are also sold into the lower parts of the country for sets. . They are grown as a fallow crop in the place of turnips, and are chiefly of the kidney kind, or of a round but flattish form. In the lower part of the country, a few farmers grow ox nobles, champions, or a red sort (I believe the Surinam) for cattle and pigs, but they are not cultivated to any great extent.

Many small farmers grow their potatoes from sets, procured either from the Moorlands, or from Scotland; and it is remarkable, that the produce from those sets the first year, is clear of curled tops, the second year, about one-third part of the produce becomes curled, and the third year almost all. No prevention is known here, nor did I ever meet with any one able to assign the cause.

The manner of cultivating potatoes is, after the land has been made fine by repeated ploughings and harrowings, to plough it into one bout ridges, after which dung at the rate of from 10 to 15 cart-loads per acre is spread, and what does not fall into the furrows, is put into them by women or children with forks.

The potatoes are cut into sets, each containing at least two eyes or buds; these are placed at about the distance of 10 inches in the furrows, which requires about 15 bushels per acre: a plough covers the sets with earth by dividing the ridge, and making a fresh one upon the potatoes.*

As soon as the plants begin to make their appearance above ground, the ridges are harrowed down, and are suffered to remain in that state for a week or two; as the weeds grow the ridges are earthed up, and in another week or two as much of the earth from the sides of them is ploughed down as can be done without leaving the roots too bare; after this the tops of the ridges are carefully hand-hoed, and the earth which was ploughed from the ridges is again ploughed to them: if afterwards weeds should grow, they are again hand-hoed or weeded, after which the earth is drawn up to the top of the ridges; the tops of the potatoes having by this time got to a considerable size, soon evercome all weeds, and consequently require no further attention till the time of taking them up. This is done by passing a plough under the ridge, and thereby laying bare the potatoes,* which are then gathered by women and children and put into "pies;" these are large heaps of potatoes laid upon the surface of the ground, and carefully covered with straw; a deep trench is dug round close to the heap, the earth out of which is laid upon the straw, and carefully beaten close and tight, which makes it in general impenetrable to frost or wet.

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* Though the practice of covering them with the plough is very common, yet it is not always done; the ridges are sometimes hoed down upon the sets by hand, and the ground is left in a rough flat state; when the potatoes are got above ground, they are earthed up by a plough, and are afterwards managed similar to the other method.

A well managed crop of potatoes by the manuring of the land, the frequent stirrings with the plough and hoes, for the destruction of weeds, and the thick shade of the plants, prepares the soil better for a succeeding crop of corn than any summer fallow or any present mode of cultivation of any other crop: but it is the opinion of a few, though I believe not justly founded, that potatoes greatly exhaust the soil, and therefore ought not to be cultivated to a great extent; which may account for the clause in a lease heretofore recited, restricting the cultivation of potatoes on each farm to an acre and an half.

Red clover is very little grown in Cleveland, along the coast, or in the country about Northallerton. In Cleveland, when they do sow it, it is with the second crop of corn after a fallow, and it is allowed to remain for two years, when they plough it out and fallow for wheat; so that some of them object to it, and say, "it impoverishes the land, and fills it with quicks:" not considering that the evil is to be attributed to their own bad cultivation, and not to the clover. A few, however, get into the excellent rotation of turnips, barley, clover, and wheat, upon lightish soil, though they are but few indeed.

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* Instead of the plough, the spade or a wide-pronged fork is sometimes used to dig up the potatoes.

Clover is pretty generally cultivated upon gravelly, loamy, sandy, or lime-stone soils, in every other part of the Riding.

It is too much the practice, in most parts of the North Riding to mow the clover twice; but it is thought if only the first crop was mown, and the latter eaten with sheep, or if suffered to remain the second year, then also pastured with sheep, that the land would be kept in much better condition, than when two or three crops are mown off it.

A large farmer in Ryedale is in the practice of having a few acres of clover to mow for green food, for his draught horses; though he does not cultivate clover for any other purpose: it is given to them in the fold-yard, and he finds that five acres of it will keep during summer as many horses, as fifteen acres of pasture of good land.

Both turnips and red clover are generally found to answer upon all soils, excepting clay.

Sainfoin is beginning to be much grown upon the vein of lime-stone, on the south side of the eastern Moorlands, and has been for many years on the lime-stone soil on the north side of the Howardian hills. It is found to be extremely productive, yielding from two to three tons of hay per acre, of a most excellent quality, and to continue in the ground from 14 to 20 years.* These are the only places in the Riding where it is cultivated.

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* Edward Cleaver, Esq. of Nunnington, has favoured me with the following account of the mode of cultivating sainfoin.

" When we sow sainfoin, we give six bushels of seed to the acre, with a " spring crop of corn; the next year, we only just top it, to keep down the " weeds which grow amongst it, as it does not flower till the second year: " great caution is necessary in the choice of the seed, for it is a fact (not " generally known) that sainfoin seed, more than a year old, will not vegetate at all, and therefore it should always be bought where you can be " upon a certainty. I have been repeatedly imposed upon by the seedsmen, " as it is difficult to distinguish the difference between old and new seed, " except by experiment, which comes too late. For this reason, seedsmen " ought not to have any seed in their possession in the months of May, June, Marshall, in his Rural Economy of Yorkshire, speaking of sainfoin, says,

"The great advantage of sainfoin, and that which distinguishes it in a striking manner from all other crops, is that of its feeding principally below the field of ordinary vegetation: bringing up to the surface vegetable matter which, without it, would for ever have lain useless to agriculture; and enriching the cultivator with treasures, which without its assistance, might as well have been situated at the earth's centre. While he is annually reaping a crop of the most nutritious herbage agriculture is at present acquainted with, his soil, so far from being exhausted, is in all probability gathering strength to enable it to throw out in future a succession of arable crops; besides the additional advantage arising from the quantity of manure which he has been extracting from the bowels of the earth, by twenty or thirty crops of sainfoin."

GRASS LAND.

The principal part of the grass land in the North Riding consists of old pasture and meadow, which are generally very much neglected, and lie in the worst form that can be devised; in broad lands with very high ridges; the consequence is, that the upper

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or July, for such seed can answer no other purpose than that of fraud or deception; since if used, it will be the certain means of destroying the farmer's crop.

"I am the more particular with respect to sainfoin, because it may be sown with success upon land of the most inferior value; and if well attended to, will produce two tons of hay upon an acre, in a favourable season. At all events, it must not be stocked with any kind of cattle after Christmas, for they will destroy the bud for the next year. Hard manures seem the properest for encouraging the growth, as common dung has generally too many other grass seeds in it, and sainfoin will admit of no rival to come near it."

parts are over-run with moss, and the lower parts with rushes; and in case of drought the ridges are much burnt, and do not so quickly receive advantage from rain, as when more level. It is also much over-run with thistles and ant-hills; and the reason I always had given me for its remaining in this state, was, "that "the occupiers were restricted from ploughing it out." I have often been surprised to see land in such a neglected and unproductive state, frequently under the eye of both landlord and his agent; it is very common to see land, which if ploughed up, and under a proper system of husbandry, would be worth 20*s.* per acre, in its present state dear at 7*s.*

Artificial Grasses.——The sowing of grass seeds, to continue as meadow or pasture for only two or three years, is too little practised in every part of the Riding; but it is more so, in that well cultivated part of the country lying betwixt Borough-bridge and Catterick. They are chiefly sown when the land is intended to remain permanently in grass; and often with the second crop of corn after a fallow, when the land is become foul and exhausted; nevertheless, there are several farmers who sow their grass seeds with the first crop after a fallow or turnips; and a few in Ryedale who sow them upon a spring fallow, without corn upon strong land, and find it answer much better than sowing them with corn: indeed there is a very evident superiority in favour of that practice, when compared with that of sowing them with corn. The method is to sow them as soon in spring as the land can be made fit; the tops of the weeds which may grow amongst them are mown off twice in the course of summer, and land rolled after each mowing; by autumn, if the season has been tolerably favourable, it is a rich luxuriant pasture.

About Halnaby they sow hay-seeds and red clover on their worst land, and let it lie about 12 years, and manure it whilst young with fold-yard manure.

Kind and Quantity of Seed.——The general practice is to sow white clover, trefoil, rib grass, and hay-seeds, with which some mix red clover; others sow rye grass instead of the hay-seeds.

It is common to sow from 10 to 14 pounds of the small seeds per acre, about half of which is white clover.

One large farmer in Ryedale sows of white clover, 14 lbs. and of trefoil,* rib grass, and red clover, 7 lbs. and one-quarter of hay-seeds, or in lieu of the hay-seeds, two bushels of rye grass: this is upon a good strong soil. Another very capital farmer sows 20 bushels of well dressed hay-seeds, 10 pounds of white clover, and four pounds of red clover; but where the land is very shallow, two bushels of rye grass instead of the hay-seeds.

Several people will not sow hay-seeds, from a just idea that they are composed of " they don't know what," and therefore prefer rye grass.

The best farmers usually pasture their new laid ground the first two years, and that chiefly with sheep; as they improve grass land more than any other species of stock, both by their treading, and by their dung and urine being more equally dispersed over the land than those of any other.

In the dales of the eastern Moorlands it is the common practice, if the land has not been longer than five or six years in ploughing, not to sow any grass seeds when it is laid down, but to let it acquire such a covering as nature will afford it; the principal part of this consists of the meadow soft grass (*holcus lanatus*, provincially the duffield grass) a very ordinary grass, either for meadow or pasture. The reason they assign for continuing in that old practice is, that if the land is not ploughed longer than five or six years, it gets well covered in one year, and that white clover does not suit their soil, except where it is sandy upon a shale.

If land, which has been a longer time than the above in ploughing, is wanted to be laid down, they sow rib grass and hay-seeds, the last of which are produced from those natural meadows.

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* Trefoil is found to answer remarkably well for sheep, upon the thin lime-stone soil on the northern margin of Ryedale.

HAY-MAKING.

In that branch of rural business, this district (excepting the dales on the western Moorlands) is generally deficient, no regular mode being followed. A great want of attention in general prevails in getting the crop dry, with as little loss of the virtues of the grass as may be. In this particular, the western dales excel every other district of which I have heard. For the following account of the process of hay-making there, I am indebted to my friend William Fothergill, of Carr End.

" Hay-making being of such great importance in agriculture, " perhaps the method practised in the dales of the North Riding, " &c. deserves to be better known; but may we not first consider " it as an axiom, that *speedy and equal* exsiccation is of primary " consequence to the preservation of the virtues of dried plants, " whether for medical or economical purposes; and this granted, " then let us see how far the practice in these dales is likely to ob-" tain the desired end.

" Mowing being the same in all places, I shall pass over that " operation, and proceed to the next, which is spreading the " swathes abroad; this (provided the weather is promising) is " always done as soon after mowing as the vacancies betwixt the " swathes are a little dried; but always with the hands, not forks, " the miserable invention of indolence: for if the hay-makers are " expert, they will not only do it in less time, but more completely " than with forks. The grass being strewed equally, and laid as " light on the ground as possible, is suffered to remain in that con-" dition till next day about 11 o'clock, when the upper surface of " the grass will be found considerably dried and withered; the " hay-makers then begin at the side of the field farthest from the " wind, and make the grass into small rows, which, if artfully " performed, will expose an entirely new surface to the influence " of the sun and air; this operation is performed with great fa-" cility. In the evening of the same day, the rows are made into

" small cocks; the next morning (as soon as the dew is well " evaporated) the cocks are spread abroad carefully by the hand; " about noon, when thought necessary, it is again made into " small rows called turnings, which, by varying the surface, expedites its complete drying; and if the weather has been perfectly fine, from the cutting of the grass, it is found sufficiently " dry to carry to the barn or rick, if the quantity to be put together is not very great; but if that is the case, it is sometimes " made into large cocks, where it is suffered to undergo a slight " fermentation, but is never allowed to remain long before it is " carried, as the base of the cock would be injured by the moisture of the ground, as well as the outside by the influence of " the weather.

" In the dales where the above method of hay-making is practised, there is scarce an acre in tillage. Hay is the grand object of the farmer, and he bestows upon it the most sedulous " attention, and has many difficulties to combat: the season " commences late, the surrounding hills occasion frequent and " sudden showers, and the meadows which are all natural, " abound with the *trifolium repens* and *pratense, ranunculus* " *bulbosus, repens* and *acris, spiræa ulmaria, sanguisorba officinalis, plantago lanceolatus, geranium sylvaticum* and *pratense, betonica officinalis, &c.* which being more succulent " than the grasses properly so called, are more difficult to harvest than the produce of meadows where the grasses greatly " predominate; yet with all these difficulties, more hay is reaped " in these dales with the same number of hands, than in any " other place I have seen. The excellence of this method consists in exposing as great a surface as possible to the influence " of the sun and air, and varying that surface as often as necessary by the most simple operations, by which means the whole " is equally and readily dried. This certainly must be preferable to the practice which prevails in many parts of England, " of letting the grass lie several days in swathes. The operation " of the dew by night, and the sun by day, deprives the upper " surface of smell, taste, and every essential of good hay, whilst "the under part remains green as when cut; it is then carelessly "thrown abroad with forks, and suffered to remain till dry "enough to carry. Let reason and experience determine "whether hay reaped in this, or the manner first mentioned, is "likely to be most nutritive and palatable."

MANURES.

No branch of rural economy is managed with less attention or judgment, than that of making and preserving the manure produced upon the farms. The site of a fold or dunghill is generally chosen upon a hill side, where there may be a good fall for the water to run off; the eaves of the buildings usually drop into the fold-yard, the water consequently runs through the manure, and carries the strength of it, either into a road or a ditch, where it is entirely lost to the farmer.

A few attentive farmers are in the practice of having a year's manure beforehand; while others, as soon as the fold-yards are cleared of cattle, have all the manure turned over and laid more compact, which brings on a strong fermentation, and makes it tolerably fit to use for turnips that year.

Lime is generally used, and when the land has not been long in ploughing, is found to answer very well on all soils, but incomparably well upon land fresh pared and burnt. It is seldom laid upon grass land, except in composts; and is applied to a great extent, and with peculiar advantage on the rich arable lands of Ryedale, and with equal advantage, though less extensively, on the grass lands.

Lime is an utter enemy to ling or bent; so much so to the former especially, that wherever *even lime-stone unburnt* is thrown down upon ling, in no great length of time the chippings of the stones, and the substance washed off from them by rain, entirely destroy the ling, and produce a fine sweet herbage.

In the western Moorlands, when land which is over-run with ling or bent is intended to be improved, it is the practice to lay on three or four chaldrons of lime per acre; which in one year entirely change the natural produce to that of a fine turf, full of white clover.

Kelp ashes——are principally engrossed by the proprietors of the allum works along the sea coast; but are sometimes used for grass land, and found to be a very valuable manure.

Turf ashes——are used in the dales of the eastern Moorlands, and along the coast: they make an excellent hand manure for any kind of crop, particularly turnips; but they are not used to the extent they deserve.

Composts——are much used in the northern part of the Vale of York; and in some degree in almost every other part of the Riding: they are made of the cleanings of ditches, and sometimes of the shovellings of roads,* mixed with lime, and all thoroughly incorporated: though it is not a strong manure, yet it is found to be very beneficial to grass land.

Isaac Leatham of Barton, near Malton, has made a compost of earth, and soot, or pigeons' dung; in the proportion of two loads, of thirty bushels each, of the first, to eight bushels of either of the last, spread in layers of six inches (*stratum super stratum*), to the thickness of three or four feet: if the heaps are cut down perpendicularly at the time of carrying them away, the compost will be sufficiently mixed. He has found it answer well for wheat and artificial grasses, if laid on early in the spring.

Bartholomew Rudd of Marsk, makes composts of kelp-ashes, sea-weed, slam from the allum works, and lime, all mixed together with earth, and finds them to answer well. † Slam he has not long used; but from the experience he has had of it, he thinks it very beneficial.

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* The shovellings of roads are used only by a few individuals; and, notwithstanding many of the roads in this Riding are repaired with lime-stone, and the shovellings collected in heaps, the farmers are too idle to cart them away.

† Slam is a refuse in the making of allum; but of the component parts of which, I am not sufficiently acquainted with chemistry to be qualified to

It does not appear that marle now is, or ever has been made use of as a manure; or is to be found in any part of this Riding.

WATERING OF GRASS LAND.

Notwithstanding this branch of improvement has been successfully practised in some of the southern counties for many years, yet is the practice unattempted in this Riding, which affords so many situations where considerable quantities of land might be watered at a very small expence; indeed, necessity has driven some individuals, in dry summers, by stopping the course of brooks and rivers, to turn the water over such of their pastures as were capable of receiving the benefit; but I have not met with one instance of a regularly watered meadow.

The lands immediately adjoining all the rapid rivers or streams, are well situated for that improvement; and all the dales in both the Moorlands are singularly so: scarce a field in them that has not a stream of fine spring water running through it; and in the western Moorlands, most of the streams issue out of lime-stone; which, I apprehend, fertilizes the water in a considerable degree.

PARING AND BURNING.

This mode of breaking up coarse, rough turf, is practised in every part of the North Riding; but more generally on the east side than the west: it is performed with a " paring spade," which a man thrusts forward with his loins; and which cuts the sods about one foot in breadth, and three feet in length: it is generally thought best to pare as thin as the nature of the turf will allow, so as that it be clean cut up; if the weather is so unsettled after paring, that the sods do not get dry when lying upon the ground, women and children are employed to set them on edge, to expedite their drying; after which they are put into heaps, about the size of a bushel, and burnt.

The opinions of both landlord and tenant respecting this mode of breaking up old grass land, are very various and contradictory; some asserting it to be the most profitable improvement on old, coarse grass ground, while others condemn it, as being the worst piece of husbandry that can be practised.

Paring and burning is generally thought not to answer so well upon strong clay soils, as upon those less tenacious.

William Coopland of Aisenby, near Topcliffe, has communicated to me the following account of an experiment he made in paring and burning.

" From an accurate experiment I made some years since, I am confident that the best method of breaking up grass land, which has a tough, coarse turf, is to plough it, for the first time, just before winter sets in; to cross-plough it in the spring; and, during the course of summer, give it repeated ploughings and harrowings, with large, heavy harrows; to lime it well; and in autumn, sow it with wheat. The above method was practised on one half of a field; the remainder of which was pared and burnt: the result was, that the crops upon the pared and burnt land, after the first two or three years, kept gradually growing worse; and upon the ploughed ground, the crops for some years grew better; and afterwards were visibly superior to the pared and burnt land."[*]

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[*] I saw a field in Ryedale which was ploughed out of grass about 20 years since; one acre of which was at that time extremely coarse and rushy, and was pared and burnt, the rest not. I was told by the occupier, the crops were uniformly better whilst in ploughing on the pared and burnt part, than on that which was not: the field has now been laid down to grass several years; that part which was pared and burnt, is now quite free from rushes,

Paring and burning is often very injudiciously applied: where the soil is thin, it is always improper; and where the turf is fine, and the soil good, it is needless.

Where tenants are at liberty to manage in their own way, the land is often very improperly cropped after this mode of management: it is frequently sown with rape, which stands to seed; next with wheat; then oats; perhaps for two or three years. It is no wonder, where such management prevails, that paring and burning should be in disrepute with landlords. The ashes certainly make the soil very fruitful for a time; but if it be not kept supported with manures, but constantly cropped, it becomes in a few years so exhausted, as to be little better than a *caput mortuum*.

Where the land is properly managed after paring and burning, it is generally esteemed, both by landlord and tenant, the best and most profitable mode of breaking up old coarse pasture ground; but where the management is opposite, it is much to be disapproved of, especially by the landlord.

The best farmers sow, first, turnips, which are eaten upon the land; next, oats, but sometimes wheat (if the turnips are consumed in time); then oats again; and fallow the following year for turnips.

About the south-east corner of the Howardian hills, if the land be strong, it is pared and burnt as early in spring as the weather will permit; then fallowed and limed for turnips: this is found to be the best mode of management of that soil.

After paring and burning, upon all soils (except where too wet), turnips or rape, for eatage, ought to be sown either the first or second year; when sown the first, the land should be not less than twice ploughed, and well harrowed and broke, to prevent the roots of the grass, and other vegetables, from growing again, which they generally do when only once ploughed, and occasion the land to be extremely full of sods for two or three years after: repeated ploughings and harrowings also form a better matrix in which the seed may vegetate.

and is covered with a good, sweet herbage; whilst the remainder of the field is very full of rushes, and the herbage very coarse.

When turnips are sown with once ploughing, there is generally not a sufficient mould for the protection of the seed, and in which it can vegetate, whereby the crop is very often partial and irregular.

Lime would also be found extremely beneficial in improving the turnips, and the succeeding crops, which ought to be in a similar course to the following:

First, turnips; second, oats; third, pease or beans, which should be hoed; or, instead of them, a green crop, either of clover, or rape and rye mixed, to be eaten off with sheep, or tares which might be mown, either for green fodder, or to make into hay; fourth, wheat; fifth, turnips.

DRAINING.

This species of improvement is not yet so generally adopted as it deserves, but is rather increasing; the most has been executed in the northern part of the Vale of York, and in Ryedale; and some little in almost every other part of the Riding; and without doubt would become general, if, where the land is let at will, the landlords would unite with the tenants in the expence; or agree, that in case the tenant should leave the farm in a given number of years (supposed to be within a sufficient term for him to be repaid, that he should be allowed for the expence in proportion to the time expired. But under-draining is expensive; and where the tenant enjoys his farm at the will of the landlord, it is a discouragement to make this, as well as other expensive improvements.

The mode of doing it is, to cut the drains along the verge of the higher side of the springy ground, of a sufficient depth to catch the spring; the water from which is conveyed by other drains into some open ditch; and it is sometimes necessary to make some cross drains, to take the water away more effectually;

and where cobbles (pebble stones) only are used; and which, on account of their inclination to be globular, and consequently to leave greater interstices than any other materials that can be used, are the best calculated of all others for the purpose, the drains are filled with them to the depth of about half a yard, or more, if they are plentiful: upon the cobbles, a covering of straw is laid; and over it the turf, if in a grass field: these, together, effectually prevent the loose earth from falling among the stones, and injuring the course for the water. If no turf is produced in making the drains, it must either be procured from a distance, or a greater quantity of straw made use of: and lastly, the remaining part of the cut is made level with the earth that came out of it. But where stones, not possessing the globular shape of the above, or common quarry stones, are used to form the drain, it is usual to make a small conduit or tunnel along the bottom of the drain to convey the water; then to fill to a certain height with loose broken stones, and finish off as before.

Wood is not often applied to the purpose of draining, because, though in many places it is plentiful, stone is in general more so; and though the wood will perform its office equally well at first, drains made with it are more liable to decay; and if taken up to repair, cannot be renewed with the old materials; a disadvantage not found where stone is used.

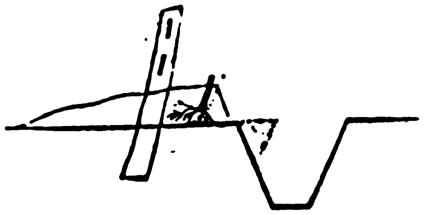
In a few situations, where neither of the above materials can be easily procured, hollow drains are made in the following manner: suppose a drain be cut 1½ feet wide at top, and three feet deep; at the depth of two feet, it is contracted to one foot; at the bottom of this another cut is made, about nine inches wide, which tapers to the bottom, and consequently leaves a shoulder on each side, of the breadth of 1½ inches, and at the depth of two feet from the surface; the top sod is put in with the grass side downwards, and being half a foot wider than the vacancy intended to receive it, is necessarily rammed in very hard, and becomes capable of supporting the earth, with which the remainder of the drain is filled.

This drain, where the soil is of a tenacious quality, and the field remains in grass, will last a great number of years; but there is danger when in ploughing, of the horses feet breaking into the drain, and stopping the passage for the water.

A considerable degree of attention is paid, in most parts of the North Riding, to gripping (that is, open surface-draining) the ploughed land, in order to carry off the surface water; but a general neglect of the grass land prevails in this respect; the furrows of which are often filled with water, which is suffered to remain till imbibed by the earth, or evaporated by the sun and winds.

FENCES.

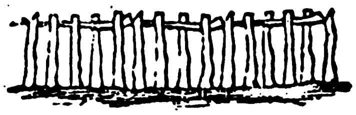
White thorn (provincially quick-wood), constitutes the most common fence throughout the Riding; and is planted for fences when about three years old.



Where a ditch is necessary, it is common to lay one row of sods upon that edge of the bank on which the wood is intended to be planted, with the grass side of the sod to the ditch; the plants, after being pruned to the length of about four or five inches, are put upon the back of the sod, with the end about one inch above ground: then more of the best earth is taken out of the ditch, to put to the other side of the plants: they are securely fenced from cattle with posts and rails; and for six or seven years after are, or ought to be, kept clean from weeds; but a manifest want of care in that respect is too often to be perceived.

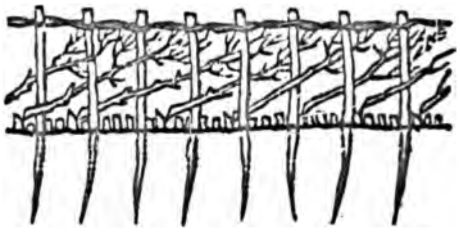
The after-management of those hedges admits of some variety; and it is very rare in this Riding to see any under one that is good. The usual mode is extremely bad, and certain in a short time to ruin the fence.

When the hedge has acquired a pretty considerable degree of strength, perhaps at about 10 years old, it is headed down to about two or three feet in height, by which the succeeding shoots rise from the top of the stems; in the course of a very few years the lower part becomes naked and bare, and many of the stems die, and consequently the hedge full of openings; when it has again grown large, those shoots which rise from the top of the old stems are again cut, leaving only a few to be laid down even with the top of the fence; this is accomplished by making a nick on one side, which gives them sufficient liberty to lie in an horizontal position, being bent down on the contrary side to that on which they are nicked.



This mode of management makes a fence very unsightly, and never is sufficient to turn sheep without the addition of dead wood.

Another mode of management, which is much superior to the above, though not without its inconveniences, is adopted by several farmers; and that is, *laying* the hedge.



This is chiefly performed upon hedges rather young; and is done by cutting off the stems close to the ground, leaving only one in a foot, which is dressed all the way up to near the top, and is nicked and interwoven in a reclining position, with upright stakes driven into the ground, at about the distance of half a yard; the top of the fence is then "bound" with hazles, or other small wood, which is twisted together, and incloses each stake; this stiffens the stakes, and keeps layers in their places: from the bottom of the fence proceeds innumerable shoots, which form, in about two years time, a very thick young hedge; but the inconvenience is, that the layers in a few years die, particularly if they be strong ones, when the dropping from them, and from the dead bindings, injure the tender wood beneath.

A very few, when the fence wants renewing, and they can protect it from cattle for a few years, head the whole down to the ground; in consequence of which, it puts forth a prodigious number of shoots, and is the best mode of renewing a hedge.

In the low lands adjoining the river Derwent in the Marshes, about Ayton and Wykeham, where drains are wanted as well as fences, two ditches, each eight feet wide, and sixteen feet asunder, are made; the soil which comes out of the ditches is thrown on the intermediate space, which is planted with bitter willow (*salix pentandria*) on each side, and alder and birch in the middle. This is at first a good fence; but it takes up much land, and is only to be practised where that is not very valuable: the space between the ditches is rendered very useful and profitable to the farmers, by producing wood for rails, gate and stack bar slices, hedge stakes, and several other purposes.

In the dales of both the Moorlands, where stone is plentiful, stone walls without mortar are the prevailing fence; they are made about 5 feet high, generally coped either with large stones laid horizontally, or less stones set upon an edge.

LIVE STOCK.

The breed of cattle throughout the North Riding, is the short horned, except towards its western extremity, where some small long horned cattle are to be met with; and also a mixed breed between the two;—the natural consequence of bordering on the West Riding and Westmoreland, the countries of the long horned breed.

The short horned cattle of the northern part of the Vale of York, and of Cleveland (where also considerable numbers are bred), are known by the name of the Tees-water breed; and in the south of England, by that of the Holderness cattle, from the district of that name in the East Riding, where this breed was either originally established, or first so improved as to bring it into notice, and where, with the district now under survey, the best of the breed are still to be met with. This district is supposed to produce the largest cattle in the kingdom; and several proprietors of stocks have of late years, at considerable expence, attentively improved them, encouraged thereto by the great prices given for cattle of this breed, in consequence of its increasing reputation. But it is a matter of regret, that a great want of attention among the generality of farmers in improving their stocks, should still prevail; which can proceed only from a narrow and ill-judged parsimony; as spirited improvers are scattered over the whole of that part of the Vale, north of Bedale, through whom, at little additional expence, they might obtain the necessary improvement.

The cattle of the improved breed are very large and handsome; their colour, light red, or black blotches distinctly marked on a white ground; their backs level; throat clean; neck fine; carcass full and round; quarters long; hips and rumps even and wide; they stand rather high on their legs, handle very kindly, are light in the bone in proportion to their size, and have a very fine coat, and thin hide.

The best farmers breed and completely fatten their cattle! Their steers (young oxen) when three parts fat, in the autumn, after they are three years old, sell from 13 to 18 pound each; and in the spring, when completely fat, being then 4 years old, from 18 to 24 pound each.

Very few oxen, in the northern part of the Vale, and Cleveland, are used for the purposes of the draught.

Henry Peirse, Esq. of Bedale, has a breed of very large hornless cattle; some of the cows are very handsome, clean, and well made; he has a pair of oxen rising 4 years old feeding, which, without doubt, now weigh upwards of 90 stones each (14 lbs. to the stone).

In the southern part of the Vale of York, breeding of cattle is not so much attended to as in the northern part; the object of cattle there being for the dairy, for the making of butter and old milk cheese; and consequently the milk alone is attended to. The calves there are all fed for the butcher, except what are sufficient to keep up the number of cows; and therefore very few farmers pay any attention to the improvement of their stock; nor indeed under such a system is it necessary for them to do it: there is scarce one breeder in ten who would send a cow five miles to a good bull, and pay five shillings for the use of him, if he could obtain the calf by any ordinary bull nearer home, at the common price of one shilling for each cow.

This breed is generally coarse about the head, light in the fore quarter, coarse about the hips and rump, but rather shorter legged than in the northern part of the Vale.

The cattle of the western Moorlands are small: in the lower parts of the dales, they are generally of the short horned kind; but in the higher situations, near the Moors, and on the borders of the West Riding and Westmoreland, the long horned breed prevails; and in consequence of there being two breeds in the neighbourhood, it is natural that there should be a considerable number of a mongrel, or mixed breed, between the two; this mixture (in the opinion of many there) produces the best breed. They are rather heavier than the true long horned, and graze more kindly than the short horned; and weigh, when fat, from 30 to 40 stones.

No oxen are here used for labour.

In the eastern Moorlands and the coast, a great number of very good cattle are bred; they are not quite so large as those near the Tees, but are clean and fine in the bone, and very free feeders. Great numbers of the oxen are worked until six or seven years old, and then are sold, chiefly to the graziers of the south of Yorkshire and of Lincolnshire, by whom they are preferred to every other breed.

The good qualities of the cattle stock of this district seem to be more owing to the soil, climate, or accident, or all of them united, than to the care and attention of the breeders, whose spirit for improvements is very feeble indeed.

In Ryedale, with the Marishes and the Howardian hills, many cattle are bred, and a considerable degree of attention is paid to their improvement by several spirited individuals; and here, next after the banks of the Tees, the best of the short horned cattle bred in this Riding are to be met with; the breed formerly was crossed with bulls from Holderness, but since the Tees-water bulls have taken the lead, they have been chiefly resorted to for improvement.

The following are the dimensions and weight of a cow 5 years old, bred by John Dowker of Salton, which was killed last Spring:

	Ft.	In.
Height at shoulder - -	4	7
Length from horn to tail -	7	6
Girth behind the shoulders - - -	7	10
Round the hind ribs - - -	9	7
Width across the hips - -	2	4

Her four quarters weighed 90 stones, and she was sold for £28. 10*s*.

The breed of Ryedale is generally very large, with great bone, and does not feed quite so quick as the Tees-water; to remedy which, the Sussex breed* has been used for a cross by two farmers of the Dale: the effect of it has been to produce more kindly feeders, to reduce the size a little, to render the bone much finer, and to improve the whole form.

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* The Sussex breed is fine in the head and bone, with an eye remarkably full and lively; deep in the breast; wide in the hips; clean in the thigh; and shews a remarkable agility and quickness; and consequently is an

Sheep.——The sheep of the old stock of the northern part of the Vale of York, and of Cleveland, are very large, coarse boned, slow feeders, and the wool dry and harsh; they feed to from 30 to 40 pounds per quarter, at 3 years old; and a few have been fed above that weight, and produce 10 or 11 lbs. of wool each; but of late years the stocks of very many of the breeders have undergone a great change, and been much improved by the use of rams of the Dishley breed, which have considerably reduced the *bone* and *offal*, improved the wool in quality, and the mutton also, which is much finer grained, and better flavoured than of the old breed, and fatter at 2 years old, than the other at 3. The wethers are generally sold at 2 years old, before they are shorn, at from 42*s.* to 50*s.* each; and weigh from 24 to 30 lbs. per quarter: the fleece of these sheep weighs from 6 to 8 lbs.

This improvement in the breed of sheep extends betwixt the Swale and the western Moorlands, as far south as the West Riding; but it is not yet so general in the southern part of the Vale as the northern.

In that part of the Vale of York, east of the river Swale, scarce any attention is paid to the improvement of sheep, except by a very few individuals; indeed, not many sheep are bred: three or four different breeds may frequently be found in one farmer's stock; and one would think (from their appearance) that considerable pains had been taken to select the refuse of the several countries from which they have been brought:—as a proof of the want of a proper spirit for improvement, the common purchase price of a ram to ride a stock of ewes, is from 18*s.* to about 30*s.* the latter being esteemed a very great price.

In Cleveland, Sir Thomas Dundas has crossed, for two or three years past, his ewes of the Lincolnshire breed with rams of the

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excellent cross for producing working cattle, and generally milks better than the long horned breed.

Dishley blood; his stock now is very valuable, both for wool and carcass. Except at Upleatham, the Dishley blood has made but little way in Cleveland, the farmers being closely attached to their old breed; but some, by putting a Tees-water ram to ewes of the eastern Moorlands, have produced a stock better adapted to poor land than the Tees-water breed; they however fall far short in the valuable properties of the improved breed in the Vale of York.

The sheep of Ryedale, the Marishes, and the Howardian hills, possess much of the Lincolnshire blood; the original breed of the Dale having been improved by that cross; they are very slow feeders, are light forward, have the loin and chine narrow, the wool strong and heavy, and pelts thick; but through the great spirit and judgment of several of the breeders, their stocks have been amazingly improved by the introduction of the Dishley blood into them, to which some are now nearer allied than the owners of others wish theirs to be, from an opinion that the cross of the Dishley breed with sheep of a larger kind are more valuable than the pure breed, which they think too small: this improved breed is about the same size, but produces rather more wool than that of the Vale of York.

A few sheep are bred on the higher inclosed lands of the Dales in the western Moorlands, which are mostly white faced, with horns, and of a very different appearance from any others in this county; the wool dry, harsh, and thick set; they are very slow feeders, and will weigh, when three years old, about 18 or 20 lbs. per quarter, and produce about five or six pounds of wool.

The sheep which are bred upon the moors of the western Moorlands are horned, have grey faces and legs, and many of them a black spot on the back of the neck, and wool rather coarse and open; it is usual to sell the wethers, when 4 years old, at about 12 s. each; but the principal part of the sheep on the western Moors are Short Scots (so called in opposition to a larger breed of Scotch sheep, which are called Long Scots), which are bought about Midsummer, and are usually sold off again in the wane of that summer, or the summer following.

The breed of sheep on the eastern Moorlands have horns, and black or mottled faces and legs, are small and very hardy, suitable to their pasture and the climate they inhabit; their wool is open, loose, and coarser than of those bred on the western Moorlands; they are rather less in size, and sell, when 4 years old, at about 9 or 10 shillings each.

The fleeces of the sheep of both the Moorlands average from 3 to 4 lbs. each.

Horses.——Yorkshire has long been famed for its breed of horses, and particularly this Riding, in almost every part of which considerable numbers are still bred; the prevailing species of which are those adapted to the coach and the saddle.

In the northern part of the Vale of York, the breed has got too light in bone for the use of the farmers, by the introduction of too much of the racing blood; but the most valuable horses for the saddle, and some coach horses, are there bred.

In Cleveland, the horses are fuller of bone than those last described; they are clean, well made, very strong and active, and are extremely well adapted to the coach and the plough.

In the southern part of the Vale of York, the Howardian hills, Ryedale, and the Marishes, a greater mixture prevails, both of the black and the racing blood, than in Cleveland; nevertheless, those districts produce a very considerable number of both coach and saddle horses; but want of attention or judgment, or both, in the owners of mares, in not suiting them with proper stallions, evidently injures the breed.

The dales of the eastern Moorlands, and the coast, rear many horses, which are rather of a smaller breed than those before described, but are a hardy useful race, though generally too low for the coach.

Horses constitute a considerable part of the stock of the high parts of the western Moorlands; the farmers there generally keep a few Scotch galloways, which they put to stallions of the country, and produce an hardy and very strong race in proportion to their size, which are chiefly sold into the manufacturing part of the West Riding and Lancashire, to be employed in ordinary purposes.

Some large farmers in the Vale of York, and in Ryedale, do not breed many horses, but buy colts when 2 or 3 years old, which they keep until 4, using them for the purposes of the farm; they are then sold, and generally to the London dealers. By this annual practice their stock is kept up; and they get a considerable profit yearly by the horses, which perform the business of the farm.

The farmers who breed horses, generally breed from those mares which are employed in the business of the farm; these are often worked until the very time of foaling, after which they have usually two or three weeks rest before they are again taken to work; the foal, during the time the dam is working (especially whilst it is young), is shut up in a stable; and it is the practice of some, before she is suffered to go to the foal, after returning from work, to bathe her udder with cold water, and to draw most of the milk from it, to prevent the milk which may have been heated by labour from having any hurtful effect upon the foal; some continue this practice as long as the foal sucks; others, after the foal has got sufficient strength to travel along with the mare, take it along with her into the fields, and frequently suffer it to suck, from an opinion that by the milk being frequently drawn, less danger arises of its being heated, or of possessing any quality prejudicial to the foal.

The general time of foaling is about May-day (from which day the age of all horses is reckoned), and that of weaning about Michaelmas, when the foals are put into good after-grass, or the best pasture the farmer possesses: they remain there as long as the weather permits (if there is sufficient food), and on the approach of winter have a little good hay given them, where there is a stable or hovel that they can go into at their pleasure. The colts are usually gelded in the spring following, and in summer are allowed only an inferior pasture; the next winter, they make their living in the fields, or in the straw-yard, except they are intended to work in the spring, which is frequently expected of those of a strong kind; such are rather better kept, as the time of labour draws nigh, and are only put to light and easy work, and generally work only half a day at once.

Some keep their colts a year longer before the operation is performed, and find that such become the stronger and handsomer horses: the foal always receives a great check by being weaned, which it does not well recover before it gets the fresh pasture of the following summer. The foals which are gelded at one year old, receive a second check at the very time they should begin to recover the first; whereas, at two years old, they appear to be in the best condition for the operation, and recover at least as well as at one year old, and are much improved by the keeping of the preceding year.

Many of the breeders sell their colts in autumn, when rising 3 years old; but others keep them a year, and some two years longer, working them until two or three months before the time of selling them.

Making up for Sale.——The method practised by the farmers in making up their two year old colts for sale in autumn, is to give them some good grass, and only take them up about a week before the time of sale, in order to reduce their carcass, improve their coats, and teach them to lead; they are usually sold with their full tails to dealers, who afterward make them up more according to art. The first business is to draw their corner teeth, in order to make three and four year old horses have the mouths of those of five; they also undergo the operations of docking and nicking; and after having been kept for two or three months on mashes made of bran, ground oats, or boiled corn, they are sold to the London dealers, who, it is said, sell those 3 or 4 year old horses as if they were 5 years old: they are then taken into immediate work, either for the coach or saddle, and in a few months are completely destroyed by this premature and too severe labour.

This drawing the teeth is not a fraud practised upon the London dealers; they know the deception, and insist upon its being done by the country dealers. It is requisite to be done some months before the London dealers finally sell them for use, or the tooth which denotes a horse to be five years old, would not be grown; consequently the deception could not have taken place.

Exportation of Horses.——The horses which are sold for the London market, if for the carriage, are chiefly bay geldings, with but little white on their legs and faces; those which have much white, with chesnut, roan, and other unusually coloured horses, and mares, generally do not bear an equal price in the London market, but with other slight and undersized horses are more sought after by foreigners, and eagerly purchased by them for exportation; or are exported by people of this country, who carry them to the foreign markets, and ultimately obtain a price for them, equal to that obtained for those sold for home use; by these means the exportation, contrary to an usually received but ill founded opinion, has a strong tendency to reduce the price of those horses which are calculated for the home market; and since as many fillies as colts are naturally bred, and one-third of the colts at least will either have too much white for the home market, or be of some other colour than that which is fashionable at the time, if the breeder had not a market for those, which appear to be two-thirds at least of all he unavoidably breeds, he would be compelled to put such a price upon the one-third which happened to suit the home market, or variable taste of the moment, as would pay for the other two-thirds; which last would either be unsaleable, or fetch very inadequate prices. The consequence naturally flowing from this would be, that the price of horses used at home would be far greater than at present, when a foreign demand procures to the breeder nearly as good a price for the horses, that would otherwise be useless and unsaleable, as for those which are valued at home.

Pigs.——The breed of pigs which prevails throughout the whole of the North Riding, is of the long-eared kind, having long legs, high narrow backs, and low shoulders; they are very slow feeders, and require good meat to keep them even in tolerable condition; a few individuals keep the Chinese kind, and also a good breed of the Berkshire sort, both which are much more kindly feeders than the first. In Ryedale the Chinese breed are gaining ground, through the liberality of a gentlewoman now resident in that neighbourhood, who possessed of two or three excellent sows, has distributed several of their produce, both male and female, in the neighbourhood. They are larger than most of the Chinese breed I have seen; the old sow, as she runs about will weigh 16 or 17 stones.

J. Dowker of Salton has also an excellent breed of pigs, between the Chinese and Berkshire; they are deep and thick bodied, very handsome, and when only moderately fat, will weigh 20 stones.

Rabbits.——A few rabbit warrens are met with on the detached moors, and also on the skirts of the higher moors; but they are not to that extent as to make them an object of attention in this survey.

The species are the common grey, except the stock on a warren in Wensley Dale of about 150 or 200 acres, which consists of silver greys, and is the only warren I have heard of entirely stocked with this species; they are said to have been brought some years since from a warren in Lincolnshire, whither they had been originally brought from Ireland: the skins of this species are worth double those of the greys. They are not used for felts as the last, but dressed as furs, and ultimately exported in that state to China, there to be worn by the principal people.

Bees.——There are many considerable stocks of bees kept in the dales, particularly in those of the eastern Moorlands; the honey produced by which, being collected chiefly from ling, is strong and high coloured.

In the lower parts of the Riding are some few stocks, but I apprehend not one-tenth part of what might be kept. When we consider the present exorbitant price of sugar, that all the honey which is not gathered is lost, and that the expence attending the management of bees is so trivial, it appears very desireable that stocks should be kept sufficient to collect the whole.

FARM HOUSES AND OFFICES.

Throughout the whole of the North Riding, except Cleveland, a large proportion of the farm houses and offices is very disadvantageously situated, as they are generally in villages; which occasions the lands to be much intermixed, and throws some portion of the ground a long way from home. Many of them are also old and inconveniently constructed, and a general want of convenience prevails for housing of cattle.*

Many old farm houses conveniently situated upon the farms, have very inconvenient offices; but those which have been built of late years, are generally better circumstanced, both in point of situation, and convenient arrangement of their offices.

In the western dales, the cattle being housed in winter, hay barns, with a cow-house at one end, and frequently at both, are placed in every three or four fields; by this means, the hay and the manure are not carried any great distance; an important circumstance in these hilly countries, and particularly so during the time of making hay, in a country where the weather is very uncertain, attended with sudden, frequent, and violent showers.

A farm of fifty or sixty acres will have five or six of these buildings.

CARRIAGES AND IMPLEMENTS OF HUSBANDRY.

Carriages.——In the northern part of the Vale of York, few waggons are used; the reason assigned for which is, that the country is hilly; many use two, and others three-horse carts, with three-inch wheels; but most of the farmers have carts which are unusually long in the body, and with broad wheels, for the sole purpose of carrying their hay and corn, and working upon the farm.

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* Cattle are found to consume much less food, and to be kept in much better condition when housed, than when foddered either loose in a fold-yard, or in the fields.

In the southern part of the Vale, the Howardian hills, Ryedale, and the Marishes, waggons are pretty generally used, and large heavy carts, drawn by two or three horses; though many farmers keep a light one-horse cart, for purposes where a large one is not necessary.

In the dales of the western Moorlands, scarce any waggons are used, but generally small narrow wheeled carts, drawn by one horse.

In the dales of the eastern Moorlands, very few carts are met with; generally small waggons with low wheels, which do not contain more than from 12 to 20 bushels; to these they yoke two pair of oxen, with one or two horses before them. But on the verge of these moors, and on the coast, more carts are kept, and both the carts and waggons are larger than in the dales.

It is remarkable, that in these dales *waggons* are generally used because the country is hilly, but in the dales of the western Moorlands, and the northern part of the Vale of York, carts are used for the same reason; so little has reason and experiment yet determined.

In Cleveland, and that side of the Vale of York contiguous to it, very few waggons are used, generally three-horse carts, which have the horses yoked to them after a singular mode, by putting one horse in the shafts, and two abreast before him: in every other part of the Riding, the horses are yoked one before another. I apprehend it admits not of a doubt that three horses yoked in the former manner, will draw a greater weight than when single.

Throughout the whole of the North Riding, wheels more than three inches broad are very rare; a few carriages are seen in the best cultivated parts having six-inch wheels, intended chiefly to be used upon the farm, which are found a great convenience.

Thrashing machines are yet in the hands of very few: they were first made by Rastrick of Morpeth; the price from £. 80. to £ 100, exclusive of a roof to cover the wheel and the horses whilst at work. This machine is wrought by two horses, and thrashes and dresses from 12 to 15 quarters of wheat in 12 hours. A person who has one of them pays this year to his labourers for thrashing and dressing his oats by the mill, *6d.* per quarter, and expects to pay for his wheat *1s.* or *1s. 2d.* per quarter, exclusive of finding the horses for working the machine.

A great advantage arising from this machine, is that of being able to get the corn to market whenever there is an advance.

Ploughs——The plough generally used throughout the North Riding, is called the Dutch plough, a short and light swing plough, and perhaps upon the best construction of any of that kind: in the hands of a good workman it performs its business well, and requires not a great force to work it. There are a few also of Rotheram ploughs in the southern part of the Riding.

Ploughing is generally performed by two horses abreast, driven by whip strings held in the hands of the ploughman, except in the northern part of the Vale of York, and in Cleveland, where it is common to plough with three horses, two abreast, and one before.

Turn-wrist ploughs are not entirely unknown; two or three may be met with in the Riding, kept for the purpose of ploughing steep hill sides, to which they are peculiarly adapted.

A few gripping ploughs are also kept, for gripping the furrows of grass land, which is found to be an advantageous practice; but they cut out a sod of about seven or eight inches in breadth, which is more than necessary to carry off the water; and the horses in working poach the furrows very much.

The breast gripping spade, which is in the hands of a few, is much to be preferred to the last instrument; it cuts a grip of about three inches in width, prevents the inconvenience of poaching the ground by treading, and cuts the grip much straighter and neater than can be done with a plough.

The spade is made of a piece of thin iron, with a socket to admit the end of a shaft three inches broad; each side of the iron is turned up, which cuts the side of the grip, while the middle or bottom part of the iron cuts the bottom of the grip, and the shaft supports the sod cut out; and a boy with a light spade throws it off, which expedites the business very much.

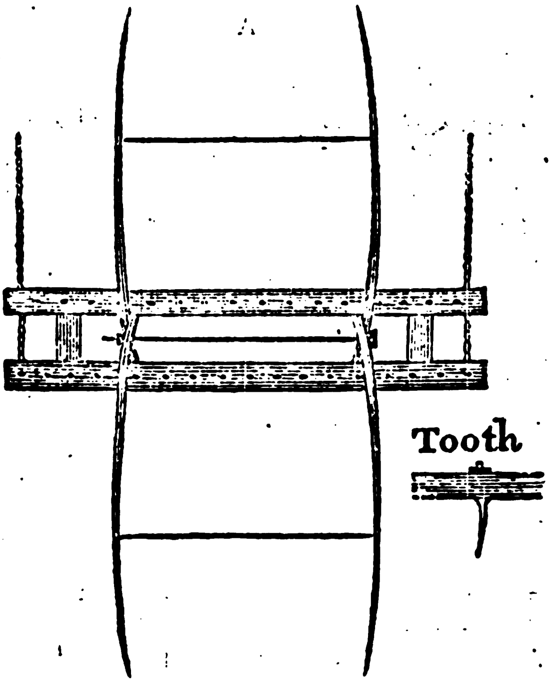
Drills,——are not general, though several are used in the northern part of the Vale of York, and a few are in the hands of enterprizing farmers in other parts of the Riding; they are chiefly applied to the sowing of turnips and beans; some think they do not answer for other grain. The kinds are the Scotch drill, for sowing turnips, Cook's drill, and Perkin's drill for sowing any grain, and Proud's drill for sowing turnips

Harrows.——The common two-horse harrow is used to cover the seed, but in many places (though not generally) heavier harrows with longer teeth, drawn by four horses, or a pair of oxen and two horses, are used to clean the land from quicks, each of them consists of four bars (here called bulls) in each harrow, with six teeth in each bull.

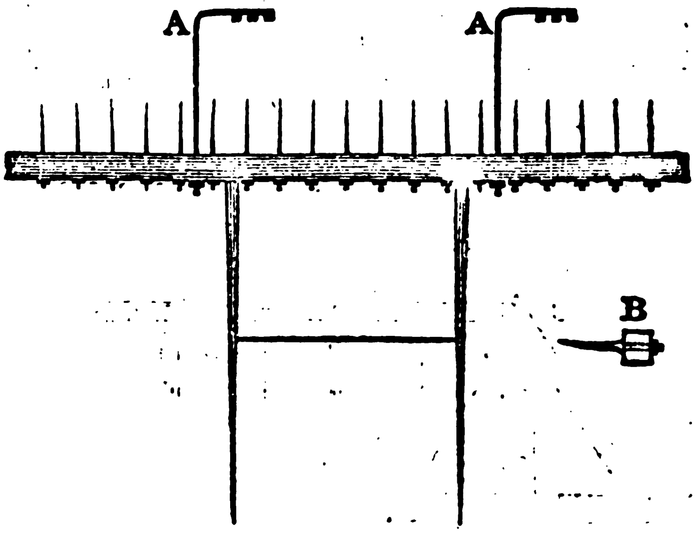
Quicking Drag.——In the northern part of the Vale of York, a drag on an excellent construction, is used for clearing the land from quicks.

It consists of two bulls, each six feet long and four inches square, with 16 teeth, 14 inches long, in each. At the upper end is a nut and screw, to make it more secure in the bull, to admit of its being more easily taken out to sharpen, or repair; the bulls are braced together by two cross pieces of the same substance, eight inches long between the bulls: from each bull rise a pair of handles similar to those of a plough, the one reclining backward, the other projecting forward; where they cross each other, an iron bar with a flat head at one end, and a nut and screw at the other, goes through all four of them, and strengthens and braces them together; these handles which point forward, rest upon the frame of a roller, to which the drag is hung by a chain fastened to each end of the hind bull, passing under the foremost; the fore handles or stilts rest upon the frame of the roller, by which means the drag may be raised entirely clear from the surface of the ground, and as the teeth have but a very small curve, the couch very readily falls off, and is left in rows ready to be raked

QUICKING DRAG.

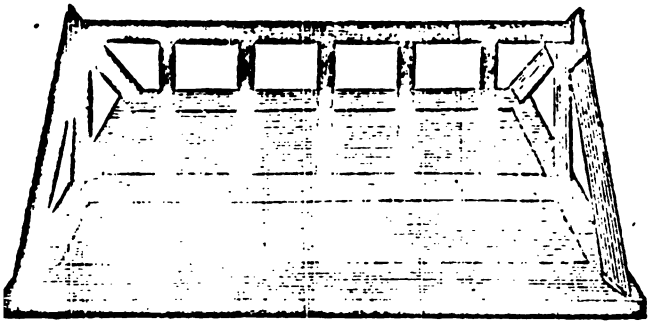


HORSE STUBBLE RAKE.



HAY SLEDGE.

A



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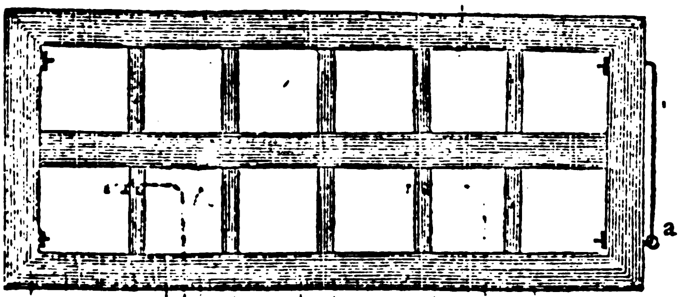

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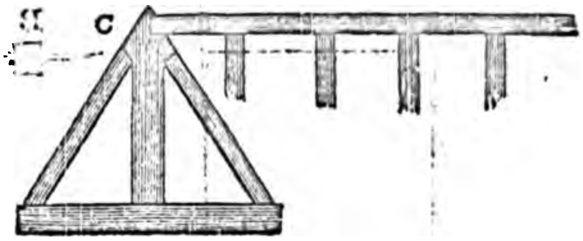

up; the roller which immediately precedes the drag, breaks the clods, and assists the operation of the latter.

A Stubble Rake, drawn by a horse, is used in the northern part of the Vale of York, for the purpose of raking the stubbles of mown corn; with this implement 12 acres can be raked in one day, by one man and a horse.

A A, are two irons fastened into the bull by a nut and screw, and projecting from it two feet, and then turning in a perpendicular direction one foot, the perpendicular part having a few notches, to one of which in each iron, the traces of the horse are fixed; and the requisite degree of hold which the rake is wished to have, is obtained by hanging the traces to a higher or lower notch.

B, a tooth and section of the bull, which are placed in the direction taken by them when working.

A man takes hold of the handles to steady it, and empty it when full.

Hay Sledge. In several parts of the North Riding, a hay sledge is used for readily collecting the hay together, when raked into rows, and intended to be stacked in the field; with this implement and two horses, the hay may be got together in much less time than with a carriage.

A, is a view of the whole of the sledge.

B, the frame of the bottom, which is boarded on the top side, as shewn at A.

C, is one end, with the top rail springing from it.

a a, Are two pieces of iron fixed on the frame with nuts and screws; on each is a ring to which the horses are hung, one horse going on each side of the row, whilst the sledge has got sufficiently loaded, when one horse crosses the row, and the load is taken to the stack: when arrived, the horses are turned about, and the rings run to the other end of the irons; the sledge is then drawn back (leaving its load), and proceeds to collect another.

LABOUR.

In the northern part of the Vale of York, and in Cleveland, where the practice of letting work by the piece by no means prevails, wages are in winter from 1*s.* to 1*s.* 2*d.*, and in summer from 1*s.* 6*d.* to 2*s.* per day, without meat. The time of labour is from daylight to dusk in winter, and from 6 to 6 in summer.

In the southern part of the Vale of York, where the practice of letting work is more frequent, wages run from 1*s.* to 1*s.* 2*d.* per day, in winter, and from 1*s.* 4*d.* to 1*s.* 8*d.* in summer, without meat; or from 9*d.* to 1*s.* per day in winter, and from 1*s.* to 1*s.* 6*d.* per day in summer, with meat. But in that part between Easingwold and Thirsk, wages do not exceed 1*s.* per day in winter, and are from 1*s.* 2*d.* to 1*s.* 4*d.* in summer; without meat; but for mowing, from 7*s.* to 8*s.* per week, with meat, and in harvest 1*s.* per day, with meat, or 1*s.* 6*d.* without, are the usual rates: the time of labour is from daylight to dusk, in winter, and in most places from 6 to 6; but in others, from 7 to 5 in summer.

On the Howardian hills, the wages are from 10*d.* to 1*s.* per day in winter, and 1*s.* 6*d.* in summer, with meat. But at the western end of those hills, they are 1*s.* 2*d.* per day in winter, and from 1*s.* 4*d.* to 1*s.* 6*d.* in summer. The time of work from daylight to dusk in winter, and from 6 to 6 in summer.

On the southern side of Ryedale, the wages are from 1*s.* 3*d.* to 1*s.* 8*d.* per day in winter, and from 2*s.* to 2*s.* 6*d.* in summer. But on the northern side, they are from 9*d.* to 1*s.* per day, in winter, and 1*s.* 4*d.* in summer, with meat.

In the Marishes, 8*d.* per day in winter, and from 1*s.* to 1*s.* 6*d.* per day in summer, with meat, are the common wages.

In the eastern Moorlands, wages are 8*d.* per day in winter, and 1*s.* in summer, with meat; but for mowing, 1*s.* 6*d.* with meat; except in the eastern part, where they are 1*s.* 3*d.* per day in winter, and 1*s.* 6*d.* in summer. Hours of labour in the three last, the same as on the Howardian hills.

In the western Moorlands, wages for husbandry business (except mowing and hay-making) are scarcely established, there being very little employment of that nature, as the country is chiefly in grass. The wages given for mowing are 1*s.* 6*d.* per day, and meat; for hay-making 1*s.* per day, and meat: the miners have 1*s.* per day of 3 hours.

LABOUR BY THE PIECE.

		s.	*d.*		*s.*	*d.*	
Thrashing wheat	from	2	0	to	3	0	per quarter.
Oats	——	1	0	——	1	2	ditto.
Barley	——	1	3	——	2	0	ditto.
Mowing Grass	——	2	0	——	2	6	per acre.
Mowing Corn, including making the sheaves, setting up in stooks, and swathe raking		4	0	——	5	0	ditto.
Shearing, including making the sheaves, and setting them up in stooks		6	0	——	7	6	per acre.
Shearing and gaiting the great crops of oats which are grown in Ryedale		8	0	——	10	0	ditto.
Heading hedges		0	6	——	0	8	ditto. (28 yards.)
Laying ditto		1	0	——	1	6	ditto ditto.
Under draining		0	6 per rood.				

Women's wages throughout the Riding, 6*d.* in winter, and 8*d.* per day in summer, except in harvest, when they have from 1*s.* to 2*s.* 6*d.* per day, according to the emergencies of the season, and the qualifications of the individuals. Women begin their work at eight in the morning, and continue to the same hour in the evening, as the men.

SERVANTS BY THE YEAR.

The wages of course vary, according to the qualifications of the individuals, and the cultivation of the country. In those parts where the country is chiefly arable, the wages are higher than where the country is chiefly in grass. In the Moorlands, £ 12. per annum is esteemed great wages for a head man, and £ 4. or from that to £ 5. per annum is the same for a woman; but in the more cultivated parts of the Riding, £ 16. for a head man, and £ 6. or £ 7. for a woman, is the common wages.

The time of changing servants in husbandry is invariably Martinmas.

Accommodations of Labourers.——The dwellings of the labourers are generally small and low, consisting only of one room, and very rarely of two, both of which are level with the ground, and sometimes a step within it. This situation renders them damp, and frequently very unwholesome, and contributes with the smallness of the apartments, to injure the health both of parents and children, for in such contracted hovels, numerous families are frequently compelled to reside. In the North Riding, the farmer is by no means well accommodated, but the labourer is much worse.

When we consider the importance of this class of people, that they are the *powers* by which the business of agriculture is performed, it is surely desireable that they should be accommodated with every convenience necessary, at least for their health.

It appears of considerable use to build several cottages, adjoining each other, that the families may have better opportunity of rendering mutual assistance to each other than if they were at a distance; besides, the conduct of each being under the eye of his neighbour, each may be induced thereby to demean himself more circumspectly; neither would it be any disadvantage were they not situated in a village, particularly in one that is large, or corrupted by alehouses. When an alehouse is near, labouring men are often drawn into it, either by their companions, or from a desire of society, which is sometimes indulged at too great an expence.

Each cottage ought to have a garden, of from half a rood to one rood in extent; in this the occupier might raise a few vegetables, which would contribute to the comfort as well as the health of his family, and have the additional advantage of employing the man in the evenings, when his time might otherwise be spent to a less useful purpose.

A few dwellings have of late been built in different parts of the Riding, with some of these conveniences; and it is well worth the attention of land-owners to increase their number.

Many of the labourers keep a pig, and some a cow, the latter of which, I apprehend, is in general no advantage to them in point of profit, but may be in that of comfort, and perhaps health, since labourers in the country are often worse supplied with milk than the same class of people in a town, the farmers in general not making the selling of milk an object of their attention, and being in general unwilling to part with it, except to their own labourers, as they make of it old milk cheese, or maintain with it their pigs or calves.

PRICE OF PROVISIONS.

The following is the Price of Provisions at the several market-towns, about the end of the year 1792.

	Winchester measure.									
	Wheat per bushel.		Oats per bushel.		Barley per bushel.		Rye per bushel.		Beef per lb.	Mutton per lb.
	s.	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*d.*	*d.*
Reeth and Askrigg - -	6	6	3	3	-		-		3½	3½
Oatmeal 1*s.* 8*d.* per peck.										
Richmond - -	6	0	3	0	4	0	-		3½	3½
Bedale - -	6	0	3	0	4	0	-		3½	3½
North Allerton - -	5	8	2	8	3	9	4	8½	3	3½
Thirsk - -	5	8	2	8	3	9	4	8½	3	3
Ripon - -	6	1	3	0	3	10½	-		3	3½
Easingwold - -	5	10	2	10	3	10½	4	7	3	3
York - -	6	1	3	0	4	3	-		3½	4
Butter at York, at 38*s.* 6*d.* per firkin (each 56lb.)										
Skim-milk cheese at York, 3*s.* 3*d.* per stone (14 lb.)										
Bacon at York 6*s.* 3*d.* per stone, (14lb.)										
Malton - -	5	10½	2	9	4	1	-		4½	4½
Kirby Moorside -	5	8	2	7	-		-		3	3½
Pickering - -	5	8	-		-		-		4	4½
Scarborough - -	5	8	-		-		-		3½	4
Whitby - -	5	8	-		-		-		4	4½
Guisborough - -	5	8	-		-		-		3	3½
Stokesley - -	5	3	-		-		-		3	3½

Cleveland. New milk cheese 37*s.* to 42*s.* per cwt. (112 lbs.)
Butter from 34*s.* to 38*s.* per firkin, of 56 lbs.
Turnips £ 4. 4*s.* per acre.
Hay from 8*d.* to 10*d.* per stone, of 14 lbs.

Wool of the pasture sheep £ 8. per pack (240 lb.), or at 10*s.* 8*d.* per tone, of 16lbs. each.

Western Moorlands sheep, £ 3. 16*s.* per pack, or at 5*s.* 0¼*d.* per stone, of 16 lbs. each.

Eastern Moorlands sheep, £ 3. 12*s.* per pack, or at 4*s.* 9½*d.* per stone, of 16 lbs. each.

The above are the prices of the best of each article; wheat of an inferior quality might be bought at 3*d.* or 6*d.* per bushel less, and shambles meat of that quality at 1*d.* or 1½*d.* per lb. under the above prices.

Shambles meat is always considerably dearer from the time that the turnips are consumed to Midsummer, owing to the farmers in general not providing against that naturally scarce time; and it has been this winter from ½ to 1*d.* per lb. lower than usual at this season of the year, on account of large numbers of half-fed cattle being killed, from an apprehension of a scarcity of hay, and from the diminished consumption of fat cattle in the manufacturing country, owing to the great stagnation of trade.

Corn also generally advances towards spring, and usually continues to rise until near harvest, unless kept down by importation.

The prices of oats and barley have been unusually high ever since last harvest, owing chiefly to the unusual dryness of the last summer, which caused in them a failure of crop. The price of oats, in particular, may have been somewhat also increased by the exportation of them for the use of the armies on the Continent.

A large proportion of the oats produced in the North Riding, are consumed by the manufacturers in the West, and their great price may have been the means of increasing that of wheat; which, though an extraordinary good crop the last summer (as it always is in this country, when the summer is dry), has been higher by near 6*d.* per bushel than what is usual in other years.

Butter and cheese bear a greater price than common, because the drought of the last summer greatly diminished the produce of them, and increased the price of turnips and hay, the former being sold at the beginning of the winter, in 1793, as high as six guineas per acre, even when eaten upon the land with sheep; though on account of the mildness of the winter, the price fel before the end of the year to four guineas, and since that time to a still lower sum, while the price of hay of late years, has usually been from 4*d.* to 5*d.* per stone, though it is this winter as high as 8*d.* or 10*d.* per stone.

The price of wool is considerably lower than in the year 1792, the manufactures then being in so flourishing a situation that long wool was sold at from 13*s.* to 14*s.* per stone (16 lbs.), and was rapidly increasing in value till the commencement of the present war: since which it has declined to from 9*s.* to 10*s.* 6*d.* per stone, and is still declining.

STATE OF THE ROADS.

Turnpike Roads.——Some of the turnpike roads in the North Riding are very good, and the rest are in an improving state; great improvements have been made in some of them, particularly in that from York to Malton, by lowering the hills, straightening and widening the road, and building bridges. Considerable pains are also bestowed upon some of the roads in scraping them, which, as it causes them to dry more quickly, makes them last much longer, at all times renders them pleasanter to the traveller, and lessens the draught of the carriage. On others, however, there is equal neglect in this respect, as well as in not filling up the ruts and holes, as frequently and as soon as they are made.

Parochial Roads.——Some of the parochial roads in the Vale of York are in a pretty good state, though rough yet sound; but a great neglect prevails in the management of many of them; some are stoned upon the natural surface of the ground, and the ditches on each side suffered to remain all winter brimfull of water, by which roads in any country would be greatly injured, but in this flat and in general wet country they are almost destroyed.

In that part of the Vale betwixt the western end of the Howardian hills and the rivers Ure and Ouse, the parochial roads are generally in a bad state; no good materials being to be met with in the neighbourhood; and this is greatly increased by a neglect which almost universally prevails, of not laying a small quantity of spare materials on the sides of the roads, to repair any bad place as soon as it is made; in consequence of which, much additional labour is required at the future repair.

At Tollerton, in the last mentioned district, the assessments for the highways amount frequently to *9d.* in the pound, real rent, besides statute duty.

The parochial roads on the Howardian hills are generally made too narrow and steep at the sides, and are very rough, the stones not being sufficiently broken.

In the lower part of Ryedale and the Marishes, the parochial roads are in as bad a state as possible: good materials are scarce in some parts of these districts, but care and attention much more so in them all. Many of these roads are upon the natural soil; and in winter not passable without great danger and difficulty, if passable at all. No part of England produces worse roads, either turnpike or parochial.

Several of the tunnels and bridges in this district are also not sufficiently capacious to admit the water, which after heavy rains comes down very suddenly from the neighbouring mountains, and lays some of the roads for a considerable distance so much under water, as to cause a very great inconvenience, if not danger, to travellers.

The parochial roads along the coast are generally very narrow, steep, and rough, too little attention being paid to breaking the stones.

Cleveland holds out an example highly worthy of being followed by every part of the nation.—The roads may all be called turnpike, and may be ranked in goodness with the foremost of those of that description; yet without any toll, the whole of the road from Thirsk to Stokesley (a distance of 20 miles) may be travelled; and also all the other roads through the district of Cleveland: they were a few years since put into complete repair, and are still maintained in the same state by voluntary subscriptions, and the statute duty of the inhabitants.

These roads are not made wide, but are in an excellent form; the bed of the road is considerably raised above the natural surface on each side; the barrel is generally about five yards wide, and forms about the sixteenth part of a circle, the whole of which is stoned; this form just allows sufficient fall for the water to drain off, but is so nearly level that the carriages are not confined to one track, and consequently the road lasts much longer than when laid in an higher curve; considerable pains are also bestowed in keeping them clean scraped, and repairing them as soon as it is requisite.

The roads upon both the Moorlands are rough and hilly; those passing through and along the dales (particularly of the eastern Moorlands) are very narrow and rough, but in the larger dales of the western Moorlands are in a pretty good state

Over the eastern Moorlands, between Kirby Moorside,* and Egton, for the distance of 11 miles, a road has lately been cut; the earth is taken from the sides of the road, so that the barrel is formed without any of it being thrown upon the crown, but it is laid in heaps on each side of the road, which enable the traveller more easily to trace the line of it during storms of snow, to which this dreary tract is so liable in winter.

This practice ought to be generally followed upon both the Moorlands, where snow in winter, and many extensive mosses at all times, render them very dangerous to strangers who are under the necessity of traversing them.

In the dales of both the Moorlands, some bridges are wanting across the streams which sudden showers raise in a very short time to an alarming height, and whose great rapidity and rough bottom make them very dangerous to pass, in attempting which many men and horses have been lost.

The roads in the North Riding are almost wholly repaired by statute duty, which is performed under the direction of two surveyors of the highways, appointed annually; but an exception is met with in a township on the north side of the Howardian hills, where the practice is to employ a person by the year to do all the carriage-work, and keep the roads in repair, the expence of which is raised by an assessment laid upon the inhabitants: this has not been long practised, but it is apprehended the roads are kept in much better repair, at less expence, and less inconvenience to the farmers, than by the former methods.

Guide Posts.——There appears to have been more attention paid to the fixing of guide posts in time past, than in keeping them in repair at present: many of them have their arms broken off, or are so defaced as not to be legible, and many more are entirely wanting; without which it is very difficult for a stranger to find his way, in almost every part of the Riding.

WOODLANDS.

When the extent of the North Riding is considered, that of the woods will be found comparatively small: their amount cannot be spoken of with perfect exactness, but the following estimate of them in each district of the Riding, is as near the truth as could be ascertained during the present survey, but is thought to be within the quantity.

	Acres.
The Coast - - -	3000
Cleveland - -	1500
The Vale of York, with the Howardian hills	11000
Ryedale, with the East and West Marishes -	6000
The Eastern Moorlands - -	3000
Western ditto - -	1000
	25,500

Exclusive of the above, the North Riding produces a considerable quantity of timber in the hedge-rows, particularly in those of the Vale of York, the Howardian hills, and Ryedale; though in them, as well as the Woodlands, far less now than at no distant period heretofore; nor has the size of the timber that remains decreased faster than the number of the trees. There is reason also to believe that woods formerly covered great tracts of country, where not a tree now remains; and which, it is the present opinion, are incapable of growing timber; but evident remains of trees, and traces of woods, still indicate that the Moorlands were once a forest. The spontaneous produce of the Woodlands is principally oak, ash, and the broad-leaved, or witch elm; the produce of the mountains, much birch and alder; and of the hedge-rows, and cultivated places, various other trees, the consequence of improvements and art.

Many of the woods are under the course of what is called *spring felling*, that is, felling the trees as near as possible to the ground, but so as not to injure the crown of the root; by which management, a fresh and numerous succession of shoots soon rises from the old stool, and after being occasionally thinned during the period of their growth, and having been well defended from cattle, in about 30 years are again ready for the axe. Oak, ash, and broad-leaved elm, are equally capable of this reproduction of timber from the old root.

Spring wood, from its age, is of course small, but serves for many purposes of husbandry and country use.

Some, in going over their woods about every 20 years, raise a constant succession of timber, by leaving each time a certain number of the most likely young trees on each acre, and a certain number of every preceding thinning; so that at the same time that they leave a considerable number of trees of 20 years old, they leave also a certain number of twice, three times, four times, or upwards, of that age; fewer of each in proportion to their age. This method seems to raise the best trees, and greatest quantity of timber, because the wood, suffering little alteration, affords the most uniform and regular protection to the growth of the trees; and probably is the most profitable mode of managing woodlands. In these woods, some of the timber arrives at proper maturity before it is cut down, and is fit for ship-building, or any large purposes.*

When woods are suffered to grow to their full size, it is the practice of several to have them thinned of the underwood and other smaller growing trees, as often as these last acquire a size sufficient to make them useful for rails, stakes, or bindings for hedges, or other similar purposes, which is generally once in about 7 years; at last the whole wood, when arrived at maturity, is cut down at the same time, and again trained in a similar manner for timber.

Selling.——It is the practice in this Riding to sell the falls of wood to professional wood-buyers; these cut up the trees in the woods, according to the purposes for which they are best calculated, and the most valuable. It may happen, that in a tree there may be some particular bend, which may be of double the value for ship timber that it would be for any other purpose; while another part of the tree may be of the greatest value for house-building, or for particular purposes of manufactures or husbandry. By this mode of manufacturing the timber, by means of a middle-man, between the grower and consumer, much inconvenience is avoided: the consumer, let him be ship-builder or house-builder, can suit himself with such pieces as are best calculated for his purpose, without the inconvenience of purchasing along with them a quantity of timber not calculated for his business.

All the ship timber grown in the Riding is thus cut up in the woods, into shapes ready for the builder to make use of; where carriage is so expensive as in some parts of this Riding, owing to the difficulties of the roads, and the great distance, the timber is carried by land to the yards, at an expence amounting in some instances to one half of the value of the timber, or upwards: this mode of manufacture causes an essential saving to the ship-builders; trees may have imperfections, which till they are cut into may not be discovered; by cutting them up in the woods, these blemishes are probably detected, and the heavy expence of carriage of such faulty and useless timber saved to the builder.

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* No objection seems to arise to this mode of management, except the additional trouble that is required at the time of felling the timber, to prevent it in its fall from doing any injury to that which is intended to remain.

The oak timber grown in great part of this Riding, though not large, is most excellent; produced as it chiefly is, upon sound and often rocky ground, its growth is very slow, which renders it extremely hard and durable; and probably to the use of much of it the ship-builders of Whitby owe their riches, and the ships they build their great celebrity.

Plantations.——Planting, considering the great number of proprietors of extensive estates, and the great proportion of land which lies in an unprofitable state, and is fit for little else than being planted, has been very little attended to.

The late Sir Charles Turner made some extensive plantations upon the eastern Moorlands, near Kildale; but dying soon after, they have not received that attention which otherwise might possibly have been shewn to them.

One very extensive tract is entirely destroyed; and though a considerable number of acres remain in other places which are thriving, where the trees stand sufficiently close to shelter each other, yet even in them, in many places, they are very thin; whether they were originally planted so, or have become so by casualties, does not appear; those that are left, however, shew that trees will thrive even upon the highest, most exposed, and barren of the Moors.

The kinds are chiefly Scotch fir, larch, and spruce, with some oaks, and a few beech.

Considering the disadvantages which these plantations have laboured under, the trees that remain hold out sufficient encouragement for planting in that country.

The late —— Cholmeley, Esq. and his son, Francis Cholmeley, Esq. of Bransby, have made some considerable plantations of larches and firs upon the sides of the hills, and other barren parts of their estate, which were not worthy of cultivation.

The plantations were begun about 36 years since, and have been annually increased from that time; some of the first planted larches have been cut down, and measure from 40 to 55 feet in length, and from three to four feet four inches in girth.

Francis Cholmeley has found that the timber of the larch is very durable for every purpose; he has used it for gate-posts; and has had some of them taken up after having been in the ground 11 years; which he says, were as sound and perfect as when cut out of the tree.

The plantations already finished have a pretty large mixture of firs and other trees, but the larch being so much more valuable, thriving so well, and being of such quick growth, he intends in future chiefly to plant it.

He estimates his planting to cost him not more than 50*s.* per acre at the utmost, as he is in the practice of raising his own plants in the following manner:

The beds, on which the seeds are to be sown, are dug in the spring, and the larch cones laid upon their surface; these the sun and winds drying, cause them to open and shed a considerable part of their seed, and the cones are afterwards beaten to get out the remainder; they are then covered very slightly with earth, and kept clean weeded. At first great care is necessary to keep the birds from them, otherwise they will pick off the seed from the head of the plants just peeping above ground.

The plants are pricked out at one year old, and he finds it best to transplant them a second time, and finally plant them out at four years old; though those which have been only once removed, answer to be planted out at three or four years old, but the roots are not so good as of those which have been twice transplanted.

Several other plantations have been made in the Riding, but not to any great extent; where made, they are generally thriving, and likely soon to repay their owners.

COMMERCE AND MANUFACTURES.

Whitby, a seaport, may be ranked as the first for the extent of its commerce, employing many ships in the carrying trade; some in the Baltic trade, several on the coast, and some in the whale fisheries.

At Whitby is also a considerable manufactory of sail cloth.

Scarborough, another seaport, sends several ships into the Baltic and to Holland, and employs some on the coast.

Here also is a considerable manufactory for sail cloth and sacking.

In the dales of the eastern Moorlands, and in Cleveland, some coarse linens are manufactured, many of the small farmers employing two, three, or four looms for weaving them.

At Crathorne in Cleveland, is also an extensive bleach-yard, and a beetling mill,[*] where linens are made up similar to the Irish.

The dales of the western Moorlands have long been famous for the manufactory of knitted stockings. The present mode of agriculture of that country not affording the inhabitants much employment, this of knitting makes up the deficiency; and they are so expert at it, that it is very common for them when walking along the roads, or in the fields, to be employed in knitting. But this ancient employment is upon the decline; since the increase of manufactures in the West Riding and in Lancashire, spinning worsted has been introduced; and being a more agreeable employment to the inhabitants than knitting, it is likely the latter will, in the course of a few years, be in great measure laid aside.

In Wensley Dale, in the years 1784 and 1785, three cotton mills, and a scribbing mill were built, and a few calicoes have been made; also in the year 1793, a small mill was erected for carding waste silk.

At Masham there is a cotton and a worsted mill; and in that neighbourhood some shalloons and shags are manufactured, but not to a great extent.

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[*] Is a mill for glazing linen cloth by means of beetles of wood, which strike it as it passes slowly over a rolling cylinder.

The effect manufactures, carried on to their present slight degree, have had upon the agriculture of this district, has probably been rather beneficial than otherwise. They have in some degree increased population, and also the profits of the lower class of people, and thereby advanced in a proportionate degree the produce of the land; and the land itself has become more valuable, by being occupied in smaller allotments, and at a higher price by the manufacturers than a farmer could afford to give for it.

The linen manufactory in the eastern part of the Riding, and the woollen and cotton manufactory in the western part, are (in their present state) rather an advantage to agriculture, without being very prejudicial to the individuals who carry them on, by corrupting their morals, or impairing their health.

The cotton mills, &c. no doubt would be found more beneficial to the interests of agriculture, were they not built upon so extensive a scale; where people are collected together in large numbers, their morals are liable to be depraved, their health injured, and when employed young, their growth lamentably impeded, and strength impaired. At these mills great numbers of children are employed, and there meet with nurseries of vice, whatever they may do of industry.

Practices in Agriculture that would be of Service in other Counties.

The practice of ploughing with only two horses, and those abreast, is well worth the attention of farmers, in those counties where three and often four are unnecessarily used. A Yorkshire ploughman will by himself plough full as much land in the same time with two horses, and full as well, as a south-countryman will with four and a driver. In this district, in summer time, an acre and an half per day is generally, and where circumstances are favourable, two acres per day are frequently ploughed.

The industry of the female sex of this Riding, is an excellent example to those of most of the counties south of it. Here the hay is almost wholly made by them, and they generally perform one half of the harvesting; they take their share too in hoeing of turnips and potatoes, and do much other light business of the farm.

AGRICULTURAL SOCIETIES.

There are no societies in this Riding for the improvement of agriculture. There was one a few years since at Richmond, but either through a want of unanimity and perseverance in the members, or from a deficiency of their subscriptions, the institution has dropped.

How far the People have a Spirit for Improvements, and how such a Spirit would be best excited.

In most parts of the Riding, particularly in the Vale of York, on the Howardian hills, and in Ryedale, with the Marishes, there appears to be a strong desire in many individuals to make improvements, both in the cultivation of their land, and in the breed of their stock; but a considerable proportion of the farmers, particularly of the elder class, not having had the most liberal educations, have but little inclination for reading; and having never been accustomed to travel much from home, are in a great measure ignorant of the improvements which have been made in other counties; and if a more enlightened neighbour should strike out any thing new, or adopt an improvement from a distant part in his practice, are too apt to laugh at his foolishness, for thinking himself wiser than their forefathers, who saved money upon their farms by *the good old practice.* Thus through the prejudices of education, or rather for the want of it, improvements in agriculture are much longer in being generally adopted, than those in any other science.

It is generally thought by the most spirited improvers, that if any societies were established, the members of which would communicate useful knowledge upon agriculture, and give premiums to the best cultivators and improvers of stock, that a spirit of improvement would soon be stirred up in the more intelligent farmers.

Obstacles of Improvements, with the means of their removal, and Hints for other Improvements.

Obstacles to Improvements.——The want of greater confidence between landlords and tenants, appears to be a great obstacle to improvements, the landlord being afraid that the tenant should take improper advantages upon his farm, and thereby injure it, and the tenant being afraid of making any improvements lest his rent should be advanced in consequence of it, or he discharged from his farm.

Though this confidence appears somewhat difficult to be accomplished, yet if the landlords and their agents were better acquainted with the principles of agriculture than they generally are, and the farms let under proper covenants, with a scale of husbandry adapted to the soil, that difficulty would in a great measure be removed; instead of restricting the tenant to plough the same land which has been in ploughing for a century past; and to continue that land in grass which has been in that state at least as long, the landlord would see the propriety of suffering the tenant to change his land oftener, and would hit upon some mode, by which the tenant might have those liberties without injuring the farm; whereby not only the landlord and the tenant would be benefited, but the public also, by the additional quantity of produce which would be brought to market.

The taking of tithes in kind, or advancing the rent of them as improvements are made, are a great obstacle to improvements. Though most of the parishes of this Riding are liable to tithes in kind, yet there are many which are exempt from them; and where taken in kind, it does not appear that a rigid mode of exacting them is *generally* practised by the tithe-owners.

Game,——(where large quantities are bred) is a considerable check to improvements. Hares and pheasants, particularly where they abound, are very destructive to the corn in spring, and to turnips in winter; many of the last being wounded by them are lost to the farmer, as they rot, unless they are eaten by his stock soon after they have received the injury.

The practice of hunting is also very injurious to farmers; the winter corn in wet situations, and turnips in all, are often much damaged by the horses, the fences broken, and gates left open, whereby different stocks get mixed, or commit trespasses.

To prevent those inconveniences and injuries to farmers, may not the propriety of abolishing the game laws, as they now exist, and making the game the property of the occupiers, be without impropriety suggested?

IMPROVEMENTS.

Estates.——Many estates might be greatly improved by the fields in each farm being laid more compact and nearer each other; and if instead of the farm houses standing in villages, they were to be built in the most convenient situation upon each farm.

It would be to the advantage of the landlord, as well as tenant, if the former were to be at the expence of all capital improvements, such as buildings, the planting of new fences, draining, and such like improvements, for which he might lay on an additional rent, equivalent to the interest of the money laid out: the tenant by this means would have his whole capital to employ in the cultivation and stock of his farm.

It would also be of great advantage to agriculture if the fallows, as well as the manure of each farm, were made to belong to it, by the landlord's purchasing them on the first change of a tenant: if this were to become the case, a scale of husbandry for a number of years would be necessary, specifying in each year, the crop and cultivation of every field in the farm, and the manner of making the fallows; thus would the landlord be perfectly safe, and avoid the disagreeable consequences of a bad tenant leaving his farm, which he too often does for the sake of selling the manure off the premises, and reaping his way going crop the succeeding summer, upon the land which was fallow the preceding year. The tenant entering upon a farm thus circumstanced, would have the advantage of having less money to advance; for if the farm had 30 acres of fallow, it would require a less capital by at least 100 pounds.

Cultivation of the Land.——By the extinction of summer fallows, and substitution of green crops, as turnips, clover, rape, or tares to be mown, or meliorating crops, such as pease or beans, for all which (excepting the clover) the land should be manured and the crop clean hoed. By this means the land would be put into an equal, if not a better state, for producing a succeeding crop, than if it had been a summer fallow. It would be also to the farmer's interest if he were never to take two crops of corn in succession.

Grass seeds also for temporary leys should be more frequently sown than is at present practised in this district.

The growing of turnips without manure is a point extremely desirable to be obtained throughout the Riding, as it now is in a great degree in the northern part of the Vale of York; by this great improvement the manure of the farm, which is generally entirely consumed for the turnip crop, is spared for the grass land.

To remedy the want of green food from the time that turnips are finished, to that of entering upon the pastures, nothing has been found equal to the ruta baga. It is in high perfection a month later than turnips, the cultivation is the same for both, and though each of this new species may not grow to so large a size as of those of the old one, yet will it produce as weighty and valuable a crop, as each root is more ponderous in proportion to its size, and a greater number of them may be left upon the ground at the time of hoeing: there is also reason to think that this is more nutritious than the common turnip. Sheep are much fonder of it than of turnips, pigs thrive full as well on it as on potatoes, and horses will eat it freely.

Upon these considerations, the following scales of husbandry are offered, the one for a light soil, the other for a heavy one, and are formed agreeable to the foregoing principles of cultivation.

SCALE OF HUSBANDRY ON A FARM OF ONE HUNDRED ACRES OF LIGHT SOIL.

Fields.	1794.	1795.	1796.	1797.	1798.	1799.	1800.	1801.	1802.
No. 1.	Grass ley, 3 years old	Wheat or rye	Turnips	Barl. or oats	Clover	Turnips	Barl. or oats	Grass ley	Ditto
2.	Wheat or rye	Turnips	Barl. or oats	Clover	Turnips	Barl. or oats	Grass ley	Grass	Grass
3.	Turnips	Barl. or oats	Clover	Turnips	Barl. or oats	Grass ley	Grass	Grass	Wheat, rye, or oats
4.	Barl. or oats	Clover	Turnips	Barl. or oats	Grass ley	Grass	Grass	Wheat or rye	Turnips
5.	Clover	Turnips	Barl. or oats	Grass ley	Grass	Grass	Wheat or rye	Turnips	Barl. or oats
6.	Turnips	Barl. or oats	Grass ley	Grass	Grass	Wheat or rye	Turnips	Barl. or oats	Clover
7.	Barl. or oats	Grass ley	Grass	Grass	Wheat or rye	Turnips	Barl. or oats	Clover	Turnips
8.	Grass ley	Grass	Grass	Wheat or rye	Turnips	Barl. or oats	Clover	Turnips	Barl. or oats
9.	Grass of 2d. year	Grass	Wheat or rye	Turnips	Barl. or oats	Clover	Turnips	Barl. or oats	Grass ley
10.	Perennial ley								

Each year there will be of	A.	R.	P.
Wheat, or rye	10	0	0
Barley, or oats	20	0	0
Turnips	20	0	0
Temporary grass ley	30	0	0
Clover	10	0	0
Perennial ley	10	0	0
Total	100	0	0

Remarks.——If winter tares are found to resist in this Riding the severities of winter, I should recommend the land on which the wheat or rye was grown to be ploughed immediately after harvest, and sown with them along with some rye. This crop might either be pastured off with sheep, during the scarce time after turnips are finished and before the pastures produce any grass, or might be mown and made into hay in time to sow with turnips, provided the land was clear of quick grass. But if winter tares are found not to thrive, rape and rye mixed might be sown in lieu of them, to be eaten off with sheep after the turnips are finished, or vetches might be sown in spring to mow for fodder.

The clover should not be mown more than once at most, the first crop of which would answer best for that purpose; the latter produce, and that of the next spring, until the commencement of turnip seed time, being eaten with sheep would greatly enrich the land, and clover growing early in spring would equally increase the quantity of sheep food during that period of scarcity, and lessen the quantity of labour at that busy time of the year.

A light soil once ploughed after the clover, would be more likely to bring turnips than if oftener ploughed.

If a hand manure, such as soot, pigeons' dung, rape-dust, or the like, can be conveniently had, it might be prudent to use it, but if it cannot, there is no doubt but that a good crop of turnips would be obtained without it.

Land that is frequently cropped with clover, is in the opinion of many farmers apt to tire of it; in the above rotation the land is in clover only once in nine years.

About four or five acres of the turnip land ought to be sown with ruta baga, a part of which might be applied to the milch cows or feeding cattle, and the remainder to the sheep after the other turnips were consumed.

The perennial ley, with either the clover or the temporary ley of the third year, may be mown.

SCALE OF HUSBANDRY ON A FARM OF ONE HUNDRED AND THIRTY ACRES OF HEAVY SOIL.

ields	1794.	1795.	1796.	1797.	1798.	1799	1800.	1801.	1802.	1803.	1804.	1805.
1.	Oats or beans after grass	Turnips	Oats or barl.	Clo. or pease	Wheat	Beans	Grass ley	Grass	Grass	Grass	Grass	Grass
2.	Turnips	Oats or barl.	Clo. or pease	Wheat	Beans	Grass ley	Grass	Grass	Grass	Grass	Grass	Oats or beans
3.	Oats or barl.	Clo or pease	Wheat	Beans	Grass ley	Grass	Grass	Grass	Grass	Grass	Oats or beans	Turnips
4.	Clo. or pease	Wheat	Beans	Grass ley	Grass	Grass	Grass	Grass	Grass	Oats or beans	Turnips	Oats or barl.
5.	Wheat	Beans	Grass ley	Grass	Grass	Grass	Grass	Grass	Oats or beans	Turnips	Oats or barl.	Clo. or pease
6.	Beans	Grass ley	Grass	Grass	Grass	Grass	Grass	Oats or beans	Turnips	Oats or barl.	Clo. or pease	Wheat
7.	Grass ley	Grass	Grass	Grass	Grass	Grass	Oats or beans	Turnips	Oats or barl.	Clo. or pease	Wheat	Beans
8.	Grass	Grass	Grass	Grass	Grass	Oats or beans	Turnips	Oats or barl.	Clo. or pease	Wheat	Beans	Grass ley
9.	Grass	Grass	Grass	Grass	Oats or beans	Turnips	Oats or barl.	Clo. or pease	Wheat	Beans	Grass ley	Grass
10.	Grass	Grass	Grass	Oats or beans	Turnips	Oats or barl.	Clo. or pease	Wheat	Beans	Grass ley	Grass	Grass
11.	Grass	Grass	Oats or beans	Turnips	Oats or barl.	Clo. or pease	Wheat	Beans	Grass ley	Grass	Grass	Grass
12.	Grass	Oats or beans	Turnips	Oats or barl.	Clo. or pease	Wheat	Beans	Grass ley	Grass	Grass	Grass	Grass
13.	Perennial ley											

By this scale of Husbandry there will be in each year, of

	A.	R.	P.
Oats or beans - -	10	0	0
Oats or barley -	10	0	0
Wheat - -	10	0	0
Beans - -	10	0	0
Turnips -	10	0	0
Clover, or pease -	10	0	0
Temporary grass ley -	60	0	0
Perennial ley -	10	0	0
Total	130	0	0

Remarks.——As soon as the crop of oats or beans after grass is harvested, the land should be ploughed over, and sown with rape and rye for spring feed for sheep, which is so much towards fitting the land for the succeeding crop of turnips.

It would be a great advantage to the crop of beans, if the land, as soon as the preceding crop of wheat was harvested, were to be ploughed in narrow ridges of about four furrows each, and well gripped, to carry off all surface water; by this means the land would be laid dry, and would be greatly meliorated, by so large a proportion of surface being exposed to the frosts. The land in spring ought to have two ploughings, and be manured; the beans ought also to be sown in rows, to admit of the land being more effectually cleaned and hoed. When the beans are harvested, the land should be again laid up in ridges as in the preceding year, and in spring should be ploughed twice, and made fine by harrowings, and the grass seeds sown.

A part of the land set out either for turnips or beans, might be profitably applied to the growth of some Scotch cabbages, or ruta baga.

The fields which have been in grass four, five, or six years, or the two last and perennial ley, along with the first crop of clover, would be the most proper to mow for hay.

The reason of there being one field set out for old sward in each scale, is from a supposition that there may be a piece of rich grazing or meadow ground, which the landlord would not wish to be ploughed out; but where there is not any grass land of that description, I should recommend the whole to be thrown into the course.

Potatoes.——The raising of new varietes of potatoes from seed, is worthy the attention of farmers; for there is reason to believe that new kinds might be produced, which for a few years would be much more productive than those generally in use at this time.

Sainfoin.——The cultivation of sainfoin upon lime-stone soils cannot be too much encouraged, its value for hay being sufficiently proved, and several parts of this Riding being well qualified for the growth of it, where at present it is little known.

Watering of Meadows——would be found extremely beneficial in this Riding, the greatest part of it being peculiarly adapted to this improvement.

Fences.——From that ruinous practice of heading down hedges, as before described, the tenant ought always to be restricted.

White thorns for hedges ought to be planted much older than is the present practice. Instead of plants of three years old, with their tops cut off by the ground, it would be better if they were not used till 6 years old, and had been at least transplanted once in the nursery, and while there, at 4 years old had been cut down to the ground.

When they are planted out for the fence, it is much the best practice not to cut the tops off, but leave them on their full length, and in three years after to lay them about one foot or 16 inches high. By this means a most excellent hedge is obtained sooner by several years than by the common mode, and much labour saved in the protection of it. When the thorns are planted so small, with their tops cut off, great attention is necessary in protecting them from injury by weeds.

When the hedge has got to a considerable size and thorns are wanted, or if it should grow rather open at bottom, an opportunity should be taken when the field on one side is either in ploughing or meadow, to cut off all the stems on that side that can be spared, within one inch, or two inches at most of the ground, and to dress off all the lateral branches to the top. The next year the other side should be treated in the same manner, leaving a sufficient number of stems in the middle of the hedge; but if both fields should be free from st[illegible]. it would be best for both sides to be trimmed at the same time. By this management the hedge is renewed and made extremely thick and beautiful (much more so than when clipped) and the farmer is supplied with stakes and thorns for the repairing of dead hedges.

Cattle.——It is the general opinion of the most intelligent breeders, that the present breed of horned cattle in this Riding, may be most improved by selecting the best of their own kinds; how far this may be true in fact, it is difficult to determine, until more attentive trials have been made: a cross with the Sussex breed appears to have been tried in Ryedale with good success. Some breeders are also of opinion, that the first cross with a Galloway Scot answers extremely well, but afterwards that the breed is much hurt by it; others are of opinion, that the breed is improved by the first cross with the long horned breed, but have the same objection to it afterwards, as the others have to that of the Galloway Scot.

If these crosses answer, in which the blood of each breed is equally mixed, the objections which arise from having an unequal mixture by more of one blood being in the breed than of the other, may easily be removed, by putting the half bred cows to a half bred bull, which would keep their descendants in the same state of improvement with themselves.

Sheep.——More attention appears to have been paid to the improvement of the sheep stock than to that of the cattle. The sheep of the low lands, I apprehend, are in as good a line of improvement as they are capable of being put into; and nothing more seems wanting, except the means of opening the eyes of those breeders who are prejudiced against, and will not see the advantages of the improved breed.

The sheep stock of the Moorlands is greatly in want of improvement, both in wool and carcass; the former being generally extremely coarse and very open, does not so fully resist the severities of the weather, to which they are exposed on the high country they inhabit, as if the wool were more closely set. A quality for feeding at an earlier age than they now possess, is also very desirable to obtain.

These improvements might in a great measure be obtained by a slight cross with the Dishley breed, in the following manner:

A few moor ewes being selected, which have the finest and the closest set fleeces, a ram of the Dishley breed, but with short close-set wool should be obtained from the most barren soil on which such sheep are bred, to put to them; the male produce might be used as rams to ride the stocks. How far this cross would answer cannot be said, but seems worthy of trial, by farmers whose situations might be convenient for the purpose.

It has been suggested by a breeder on the borders of the western Moorlands, that the present stock upon them might be gradully changed for the Cotswold breed on the lower parts, and the south Down breed on the higher parts, with great advantage; but it does not appear that either has been attempted.

It has also been suggested, that the sheep of the eastern Moorlands might be improved by the use of rams from the higher parts of Scotland or Northumberland.

Weights and Measures.——Within the North Riding there is a considerable variety in the weights and measures, which also vary from those in adjoining districts; from these, as from every variation of the kind, considerable inconveniences arise, particularly from the great inequality of the measure of corn, which at present seems to rest entirely on the will of the farmer, and throws great difficulties on him who is desirous of selling his produce by the statute measure; because the corn-buyers who are accustomed to a market, know the respective measures of each farmer, and of course prefer that which is largest, since they pay no more for it than for that which is agreeable to the statute.

In the northern part of the Riding the customary bushel exceeds that of the Winchester by full two quarts; but nearer to the southern extremity, seldom by more than one.—The bushel of some individuals in the Riding is still larger, measuring about 10 per cent. more than the statute requires.

A stone of wool in York market, is 16lb.; and 4 oz. in each stone are allowed for draft; that is, for the draft of each fleece; the wool-buyers being empowered by act of parliament to weigh each fleece *separately*, if they like.

At Ripon market, a stone of wool is 16lb. 12 oz.

A stone of wool in the western Moorlands, is 17½lb.; the half pound I apprehend is for draft, as in York market.

In the eastern Moorlands the weights used by individuals vary up to 19 lbs. to the stone.

The pound of butter in the Riding varies from 16 to 24 ounces.

A stone of all other commodities throughout the Riding is 14 pounds.

Nothing is more desirable than that an uniformity of weights and measures should take place, nor would any thing be more advantageous to the public.

WASTE LANDS, AND THE IMPROVEMENT OF THEM.

It appears in the Introduction to this Report, that the quantity of lands in this Riding lying waſte, or in a state of nature, is 442,000 acres; which may be divided thus:

Capable of cultivation, or of being converted into pasture, or rabbit warrens,

	Acres.
Detached Moors - -	18,435
Of the eastern Moors, about -	60,000
——western ditto - -	150,000
Total capable of cultivation, &c.	228,435

Capable of improvement by planting only.

Of the eastern Moorlands -	136,625
——western ditto -	76,940
Total capable of improvement, &c.	213,565

The detached moors in the country, are generally depastured by all kinds of stock, each occupier turning on any kind, and in any proportion he likes; a few of the commons are stocked with rabbits by the lord of the manor. These wastes are annually lessening in a considerable degree, by inclosures under acts of parliament.

The eastern Moorlands are principally stocked with sheep at the will of the farmer, and it has been calculated in the proportion of one sheep to 10 acres.

The lower parts of some of the eastern, and generally those of the western Moorlands, with some of the higher parts of the latter, are stinted pastures; that is, the owners or occupiers have a right of pasturage for a certain number of cattle or sheep during the summer half year; but in winter that ground is common to all who have a right upon it in summer, to turn on what quantity of stock they like.

Those pastures are chiefly stocked with young cattle, horses, and such sheep as are intended to be sold off the same year.

The remainder of the high parts of these moors is without stint, producing little but ling, and is stocked mostly with sheep.

The pasturage of these moors and pastures while they are common, is greatly monopolized by a few individuals, some of whom occupy but small farms, consequently their right upon the wastes ought to be in proportion to them. These people about Midsummer go to the fairs in the north, where they buy large flocks of Scotch wethers, to turn upon these commons, which they so effectually eat up, that regular breeding stocks of the country cannot be maintained to advantage, and therefore have greatly declined.

The principal obstacle to the improvement of the moors is the great expence of obtaining acts of parliament for the inclosures, and the difficulty of settling with the tithe-owners and lords of the manors.

An instance occurs in a township on the verge of the eastern Moorlands, where two-thirds of the number of freeholders, and considerably more in value, desirous of an inclosure of their commons, amounting to about 800 acres of fine sward land, and about 12000 acres or high moors, 4000 of which are capable of very great improvement, had agreed with the tithe-owner, and signed a petition to parliament; but the lord of the manor, who possessed very little other property there, was determined to oppose it; so that from an apprehension of the expence and trouble attending an opposition in parliament, the business was dropped.*

Many attempts have been made to improve these moors by cultivation, some of which have miscarried, while others have succeeded extremely well.

The southern side of the eastern Moorlands is well situated for lime, the basis of the improvement of those moors. The northern side is not equally fortunate in that respect, consequently improvements there must be much more expensive than on the south side.

The place where the late Sir Charles Turner commenced his improvements, is very disadvantageously situated, no lime being to be had nearer than the southern margin of the moors; it was nevertheless made use of in large quantities. The tract improved is extensive, probably not less than 1000 acres, exclusive of the plantations, the greatest part of which was originally as barren as any on the moors: since his death it has been much neglected, but plainly indicates the improvement which these moors are capable of receiving. On one side of the wall nothing is to be seen but ling, on the other side, a neglected pasture of 10 or 12 years ley, producing plenty of coarse grass, and very large rushes, here and there slightly interspersed with ling. Had this land been continued in a proper course of husbandry, it probably would have paid the occupier abundantly more, than it can do in its present state. I was credibly informed, that some of the fields whilst the ley was fresh, produced crops of hay equal to those on land of far greater value.

Large tracts of the eastern Moorlands were divided, and the more fertile parts inclosed under acts of parliament obtained during the last few years; upon these several improvements have been made.

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* An inclosure of open fields, amounting only to about 250 acres in a township near to the above, was made a few years since, the expence of obtaining the act alone, and without any opposition, cost the proprietors £370.

The following is an account of one made upon Lockton moor about six years since, the quantity 70 acres, which would not let for more than 1s. per acre before it was inclosed.

" Fory-eight acres were pared and burnt, and sown with rape (except about an acre sown with rye), the produce about sixty quarters; the rye grew very strong, and in height not less than six feet, and was sold while standing for five guineas. The land was only once ploughed, otherwise the crop of rape would probably have been much better. One hundred and twenty chaldrons (each thirty-two bushels) of lime were ploughed into the field, which for want of more frequent ploughing, probably was not of the service it otherwise might have been. Part of the land was afterwards sown down with oats and seeds; the former of which afforded but a moderate crop, the latter a very good one, and has since produced two loads (120 stones each) of hay per acre. The seeds sown were rye-grass, rib-grass, white clover, and trefoil; of these the first succeeded amazingly, the others not so well; potatoes throve very well; turnips not equal to them. A farm has been built upon it, which now, along with 5 acres more of the same kind of land, is let on lease at £30 per annum.

" The soil consisted in general of benty peat upon a red greetstone, with a mixture of clay upon lime-stone; this last is in some places at a considerable depth, in others sufficiently near the surface for lime to be burnt upon the premises."

But the greatest and most profitable improvement I have met with, is one made by Richard Simpson at Saintoft, upon Pickering moors, of which he has given a circumstantial account in the following letter.

" Sir,

" According to your request when here the last week, I sit down to give you an account of the method I have pursued, to bring into its present state of cultivation the farm I now occupy, and which was allotted to me on the inclosure of the commons of Pickering and Newton. If you should think this account, or any part of it, worth noticing in your Report, as being likely to be of use to other owners that have land of similar description, in its wild uncultivated state, it is much at your service.

"The allotment contained 315 acres, and was situated on the northern verge of those lime-stone heights, which border the valley in an east and west direction for above 30 miles, from near Helmsley to Scarborough. To the north of this tract of lime-stone (which in most places rises with a gentle slope from the plain of the vale, and bears a breadth of two or three miles), lies the wild and chiefly uncultivated tract called Black-moor, and which cannot contain less than 300 square miles, not one-tenth part of which is in a state of cultivation. The soil of the farm might be classed thus:

"Class 1.—100 acres pretty strong loam, of a moderate depth upon lime-stone.

"Class 2.—70 acres of a deep sandy soil, with more or less of a red-stone earth intermixed. These two classes were overrun with heath or ling in patches, with brakens (fern) and a tough mossy herbage intermixed.

"Class 3.—145 acres of a black moory soil, covered with a uniform coat of heath, with a few brakens, and here and there a few tufts of bent grass intermixed.

"But although the upper soil of this last class was nearly alike, consisting of half putrified heath, intermixed, like all the upper soil of the dry part of the moors, with black and grey gritty (chiefly silicious) sand, and had occasionally while common, been pared for turf for fuel; yet the sub-soil in different parts varied materially, and on that difference of sub-soil I founded my hopes of improvement, and I was not deceived in the event.

"About 100 acres of this (class 3.), although the upper soil was uniformly black, and in some places two, in others from that to six inches thick, yet the soil beneath had every appearance of what (had it been on the surface) I should have called a light sandy loam, intermixed with a free-stone gravel, and had undoubtedly once formed the upper soil, before the ling or heath had encroached upon, and destroyed the other grasses, which in all probability existed there; this is a process which is going on every day, and has undoubtedly taken place on most of the borders of the moors to a considerable breadth, for ling will thrive on almost any soil, and remarkably well on a light sandy loam, and being a perennial, and I may add, a permanent plant, retaining its stem and branches all the winter; and its stems generally rising above the surface of snows, its seeds are carried thereon by the winds to considerable distances, where being lodged in the melting of the snows, and vegetating, the ling produced generally destroys the more tender grasses growing in its shade:—add to this, the soil produced by the gradual decay of the ling, becomes continually more fit for its propagation, and more unfit for the produce of almost every other species of vegetables.

"The remaining 45 or 50 acres had an upper soil similar to the last described, and a sub-soil of a hard cemented grey sand, of a most unpromising appearance, as impenetrable to water as the closest grained stone, and almost as hard; and what was worse, this stratum was too thick for the plough to penetrate through it. This is the worst species of land I have seen upon any part of the moors, for the produce of any kind of corn, even rye (except in patches) going off, before it shoots into ear, although remarkably healthy and vigorous until the period immediately preceding its shooting, which I suppose must be owing to its then sending forth roots to derive nutriment from a greater depth, and meeting with this sub-soil, totally unfit to afford that nutriment, it withers and dies; this happens alike in a wet or a dry season: and yet even this land, where lime may be had at a moderate rate, may be appropriated to some purposes with benefit to the proprietor, for when pared and burnt and well limed, both white clover and rye grass thrive on it remarkably well.

"I have been thus particular, because being well convinced that there are some thousands of acres on the borders of Black-moor, and in patches adjoining several of the small cultivated vallies that run through it, of a soil and sub-soil similar to the 100 acres of No. 3. above described; and as this land, where lime can be had at any reasonable price, (say from 3*d*. to 6*d*. per bushel) will pay very well for cultivation, being most of it fit for the produce of either rye, turnips, or oats, at the first; and what is not so, being sown with rye, and laid down two or three years with grass seeds, will then produce turnips and oats; and on all of it white clover and rye grass will succeed remarkably well, particularly the former; I think, if the owners of such lands could be induced by a more minute examination of the soil, and more particularly the sub-soil, to bring them into a state of cultivation, it would not only be a benefit to themselves, but of public utility; for in their present state they are worth a mere nothing, not sixpence an acre.

" Entering on the above farm in the year 1787, it was evident that the nature of the mossy herbage, intermixed with patches of ling, on even the best of the lime-stone and sandy soils, indicated paring thin and burning as the best husbandry; so indeed I thought, and so in general acted; but being a young farmer, and having frequently heard it asserted, " that to burn soil was to destroy it," I ploughed out 10 acres of the best herbage, and the most free from ling on the lime-stone soil without paring; I may add, that I had sufficient cause to repent it, for I have not had even one middling crop from it since, and although laid down with seeds, they have by no means so good an appearance, as those sown the same year on similar soils, although I have expended as much lime and manure on this, as on any part of the farm.

" It appeared to me likewise, that paring and burning the black moory soil on a good sub-soil would answer a doubly good purpose; for by paring tolerably thick and burning, I not only changed the worst and least putrified part of the soil into good ashes, rich in alkaline salts, but by so doing, I brought the sub-soil within reach of the plough, and could at pleasure mix it with the remaining black soil, and expose it to the influence of the air.

" I kept likewise another object in view, and that was to begin with a larger proportion of the best and most productive land, and a smaller of the worst, that by so doing, it might not only pay for its own cultivation and improvement as I proceeded, but that I might get into a better stock of manure. The first year I pared and burnt 120 acres, viz. about 80 of the classes 1 and 2, and 40 of class 3; on most of this I laid three chaldrons (of 32 bushel each) of lime on each acre; but on part of it only 2; I was induced to do this because, although our present chemical knowledge of the properties and component principles of lime is very confined, and we are utterly ignorant of its mode of acting as a manure: yet it is known that lime and alkaline ashes mutually assist each others action, as manures, in a very eminent degree, and that if lime is intended to be used at all in a succession of crops, it is always best to lay it on with the ashes. On such part of these 80 acres that were got burnt, &c. previous to the beginning of May (about 14 acres), I sowed oats with once ploughing, and had a tolerable crop, viz. near seven quarters per acre. I sowed 40 acres with rape with once ploughing; produce in 1788, 160 quarters, four quarters per acre; the remaining 26 acres I sowed with turnips, ploughing once, and had a very good crop, which was eaten on the land with sheep, and was succeeded in 1788 with oats, above seven quarters per acre.

“The 10 acres I had this year ploughed out without paring and burning were a similar soil to the above 80 acres, most of it class 1. I sowed this with grey pease; produce not a quarter per acre.

“The 40 acres of class 3. I pared thick, burnt and laid about three chaldrons of lime on each acre; such part of this as had the best sub-soil I ploughed in May, and harrowed and cross ploughed the latter end of June, and sowed with turnips, which being a tolerably good half crop, were eaten on the land with sheep, and succeeded in 1788 by a crop of oats, of from five to six quarters per acre; being in want of herbage for sheep, I sowed down this field, about 14 acres, with seeds along with the oats, viz. white clover about 5 lbs. per acre, and the common hay-seeds of the country about 5 bushels per acre; they came remarkably well, and the year following this field was almost an entire sheet of white clover. One thing in this field deserves remark, about an acre of it of as good a soil as any of the rest was not limed; the consequence of which was, that although not perceptible in the turnip crop, it was very much so in the oats, and still more in the grass seeds, very little white clover was to be seen; and now, although the other parts of the field is a tolerably good herbage, with a few thinly scattered small branches of ling coming amongst it, (owing, I suppose, to its not having been long enough in tillage to destroy all the roots of this hardy plant) *yet* that *part of the field unlimed, is nearly destitute of herbage, and covered with heath.*

" About 16 acres, other part of this 40, being of a somewhat inferior sub-soil, and the black moory soil of a greater depth, I sowed with turnips with once ploughing; these were a very poor crop, the bottoms in general not larger than the common hedge crab; they were eat with sheep in the autumn, and the land sown with rye, which produced about two quarters per acre; grass seeds were sown amongst the rye in the spring of 1788, in the proportions last mentioned; they came remarkably well, and the herbage the two following years was almost entirely composed of white clover.

" The remaining 10 acres was of the cemented sandy sub-soil above described, a little turnip seed was likewise thrown upon it after once ploughing, which produced a few dwarf tops, but no roots that were eatable; these tops or leaves were eat with sheep in the autumn, and the land then sown with rye, and with grass seeds in the spring following, in the same quantities as the last mentioned. Produce of rye six to eight bushels per acre, and these of inferior quality; the grass seeds came remarkably well; and even on this soil the white clover for the first two years was in far greater quantity than all the other grasses put together. The herbage of these 40 acres, as you would observe when here, (being adjacent to the farmstead) is yet of tolerable quality, but here and there is a sprig of young heath; I intend therefore to plough it out the next spring, and relay it with grass seeds after another succession of crops.

" I proceeded in this manner in 1788, 1789, 1790, and 1791, in which year I had gone over all my farm, except a few acres situated on hill sides, the declivities of which were too steep for ploughing; I constantly pared, burnt, and limed as above, but varying occasionally the crops. What, after the experience I have had, I would recommend as the best course for a black moory soil, is to pare, burn, and lime, plough twice, and sow rye in the autumn of the first year; to fallow for turnips for the next crop. If a little manure can be had for the fallow, there is a greater probability of the turnips succeeding; and if manure is not to be had, the lime and ashes, with the melioration of the air the soil has already received, will render it much fitter for a crop of turnips than it was when newly opened. On these light, dry moory soils, the turnips should be constantly eaten upon the land with sheep, and may be succeeded with oats or rye, according to the better or worse quality of the sub-soil; with this first crop after turnips, the land ought to be sown with seeds, in which white clover and rye grass ought to be in the greatest proportion; in grass it should lay three, four, or five years as pasture ground, when on being ploughed out again for another succession of crops, as

Oats,	or	Oats.
Turnips,		Turnips.
Oats with grass seeds,		Rye with grass seeds;

and on the worst sub-soil, grey pease or rye; then turnips, to be followed with rye with grass seeds. It will be generally found that the soil will be in a much fitter state for the production of these crops than in the first succession, always remembering to lime for the turnip crop, and if to be had, to lay on a little manure likewise.

" As no more than two crops ought to be taken for one fallow on any light upland soil, perhaps the best mode of opening out lands of the description of class 1. and 2; is to pare, burn, and lay on three or four chaldrons of lime per acre with the ashes, to plough twice for turnips, to eat them on the land with sheep, and to follow with oats, &c.; and after one or two succession of crops, the land ought to be laid down with grass seeds, always remembering, whatever the succession, to lay down the first year after a fallow, when after a few years rest, it may be *ploughed out* again with advantage.

“ As the lands of class 1. and 2, and the better sorts of class 3. are brought to an immediate state of improvement, and the profits arising therefrom are evident from the bare inspection of the crops, it will be only necessary to compare the expence and improvement on the worst species of land in class 3.

	£.	s.	d.
“ Paring and burning one acre, and spreading the ashes	0	18	0
3 chaldrons of lime, at 7 *s.*	1	1	0
Leading and spreading ditto	0	6	0
6 ploughings for a succession of crops, as rye, turnips, rye	1	10	0
6 harrowings for ditto	0	12	0
Rye seed, and turnip seed	0	16	0
White clover, and grass seeds	0	10	0
Harvesting two crops of rye	0	10	0
	6	3	0
“ First crop of rye 8 bushels, 2d crop 12 bushels, at 3*s.* 9*d.* per bushel	3	15	0
Eatage of the turnip crop, about	0	5	0
	4	0	0

So that there will be a loss of £2. 3*s.* per acre; but then it is to be considered that the herbage of the first 3 years is worth more than 10*s.* per annum, and that the soil by the operation of the lime is in a continual state of improvement, and has every appearance of being permanently worth 5*s.* per acre to farm. I own I should not have attempted to cultivate land of this last description, had it not unavoidably fallen within the ring fence of the farm, and being already inclosed, there was a greater probability of its paying for the improvement.

“ The great error into which many in my recollection have fallen in opening out land for the first time is, the *ploughing out the tough mossy sward without paring and burning*; the consequence is, that for the first four or five years there is an almost total failure of crop, and of course a want of manure for the next succession; this is done under the mistaken idea, that by burning, so much of the soil is almost totally dissipated and lost. Now although we are in want of experiments to make it evident, what greater proportion of vegetable matter is dissipated in suffering combustion with a slow fire, and in contact with earthy matter, than would be dissipated in the same, undergoing putrefaction?—yet we know, that as all vegetable soils contain more or less of calcarious earth in its mild state, the subjecting this to the action of fire must increase its activity as a manure, by bringing it nearer to the state of quick lime, and that the silicious and argillaceous parts of the soil are not dissipated in burning.—Modern chemistry will throw much light on this subject.

"I am far from asserting that a soil will not become thinner by repeated burnings, but I am opinion it will not become so in the degree generally imagined; and I am an advocate for only the first paring and burning of very old sward or heath.—But this letter is already become much longer than I first intended, you will therefore give me leave to subscribe myself

Saintoft Grange, near Your most obedient servant,
Pickering, 20th Nov. 1793. RICHARD SIMPSON."

The following mode of improvement has been practised on the moors, which were inclosed a few years since, situated on the east side of Rosedale and Hartoft-dale.

The land being ploughed, is allowed to lie in that state one year, before the expiration of which it is limed and well ploughed, and then sown with rye if on a gravelly, and wheat if on a clay bottom. This mode of management is there thought to be more advantageous than any other.

A few improvements have been made upon the western Moorlands that have answered very well: every part of those moors being well situated for obtaining lime of the first quality; this renders improvements easier and more beneficial than on the generality of the eastern.

A farmer who had an allotment of 300 acres on the inclosure of a part of those moorlands, has given me the following particulars of his improvements.

"About 20 years since, most of the commons, I mean the high black mountains in our neighbourhood, were divided by act of parliament; an allotment of about 300 acres fell to my share, which when inclosed by a ring fence, was not worth £. 10 a year. I subdivided this allotment into fields of about 15 acres, and undertook the cultivation myself, and having now improved more than 200 acres of it, I have let the whole at an easy rent, for £120. a year clear, to a good tenant.—Its ancient occupiers were plenty of moor game, and perhaps 100 Scotch sheep, worth about 10 shillings a piece, after being there two years. Of late years it has well maintained about 250 long-woolled sheep, 40 Scotch bullocks and 10 horses; the ewes with their lambs and the year olds, went to that high situation in April; the year old sheep were brought off at Martinmas and put to turnips; the ewes and lambs continued there till near January, when they were brought into a more sheltered situation, and remained there till April following, and then returned with their increase to the cultivated mountains: in March the wethers when only once shorn were generally sold for about 44*s.* a piece. The 40 Scotch bullocks on an average paid me for a year's keeping there, about 50*s.* a piece. The horses, in the breed of which our country I think shews more taste than judgment, frequently left me nothing.

"The produce of this tract when I began with it was ling, the soil chiefly a black peat earth six or eight inches deep; this soil if it had more substance is not unfertile. I burnt the ling, had no ashes; I then ploughed and harrowed in about five chaldrons of lime per acre, with turnip seed; had turnips worth to me 40*s.* an acre, which were eaten where they grew with sheep. In June the following year, I harrowed in about five chaldrons more, and sowed grass seeds, and to secure a succession of pasture grasses during the whole summer, I mixed rye grass, which came up first, with red clover and trefoil the second, white clover the third, and last of all feather grass,[*] hardy on all soils, and by no means unprofitable, if properly managed. Lime-stone being on the spot and coals cheap, the lime stood me to no more than 5 *s.* a chaldron, of 32 bushels. Lime is the great instrument for binding, sweetening, and invigorating the soils in the situations alluded to, which on trial I found would not produce corn of any kind."

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[*] I apprehend my informant means by feather grass, stipa pennata, which is known to grow upon the summits of some of the most lofty of the north-

A very capital improvement was made about 20 years since, under the direction of William Dinsdale, on a large tract of the moors betwixt Hawkswell and Richmond:—the soil a black turf earth.

The ling being first burnt off, the land was ploughed in summer, and cross ploughed in autumn. In spring following it was limed, and after one more ploughing, sown with turnips, which were eaten off with sheep; these were succeeded by oats, they by a whole year's fallow; after which turnips were again sown, which being eaten with sheep, were succeeded by oats and grass seeds; this new ley continued to be pastured with sheep for two years, and was then ploughed out again for oats.

A gold medal of the Society for the encouragement of arts and agriculture was granted for this improvement; for a more particular account of which, see the Transactions of that Society, vol. 2. 1784.

Since the above improvement was made, several hundred acres of the same tract of moorland have been inclosed and improved in a similar manner.

It appears from the foregoing experiments, that many parts of those vast tracts of moors are capable of improvement; but if the higher and more barren parts were planted, their shelter would considerably aid the improvements of the remainder.

Many parts of the western Moorlands might be advantageously stocked with rabbits, after the vegetable produce had been improved by the use of lime.

The primary object of the cultivation of these moors should not be corn, but food for sheep; the former might sometimes be taken without disadvantage; but two green crops, exclusive of

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ern mountains, but which I never before heard to have been any where cultivated.

temporary leys for two or three years ought to intervene between each crop of corn. By this mode of culture and the use of large quantities of lime, the land would be in a constant state of improvement, and would be found much more profitable, than when kept exhausted by repeated crops of corn.

The stock of the improved lands should be principally sheep, as the growth of winter food for them, and their consumption of it upon the ground are the most certain and expeditious means of improving them.

OPEN FIELDS.

Though this Riding possesses some extensive open arable fields, yet upon the whole the quantity is not large, and they are in some degree annually lessening by inclosures under acts of parliament, and would still more rapidly, but for the great expence of obtaining those acts.

The improvement made upon open fields and wastes after inclosure has been very great, principally by the adoption of the turnip and clover husbandry; and by the cultivation of artificial grasses; the stock has been greatly increased in numbers, and still more so in value, and the crops of corn rendered so much superior to what they were when the fields were in their open state, and fallowing was practised, that there is nearly as much corn grown as when the whole was arable. By inclosing waste lands, large tracts of very inconsiderable value are brought into culture, on which is reared or maintained a much more valuable stock than when they were in their original state, besides producing much corn, and increasing the quantity of labour.

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